

STATE OF WISCONSIN CIRCUIT COURT MILWAUKEE COUNTY

DALE W. BRANDT, AS PERSONAL)
REPRESENTATIVE OF THE)
ESTATE OF GLENN W. BRANDT,)
PLAINTIFF,)
VS.) NO. 605-147
OWENS-ILLINOIS, INC., ET AL.,)
DEFENDANTS.)

DEPOSITION OF WILLIAM Z. FLUCK

OCTOBER 15, 1985

Reported By: MARY A. ARSENEAU, CSR NO. 4848

Central
Coast
Court
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DEPOSITION OF WILLIAM Z. FLUCK, A WITNESS,
TAKEN ON BEHALF OF DEFENDANTS, AT THE
RESIDENCE OF WILLIAM Z. FLUCK, 122 INVERNESS
AVENUE, LOMPOC, CALIFORNIA, COMMENCING AT
10:00 A.M., TUESDAY, OCTOBER 15, 1985,
BEFORE MARY A. ARSENEAU, CSR NO. 4848,
REGISTERED PROFESSIONAL REPORTER, A NOTARY
PUBLIC, PURSUANT TO NOTICE.

APPEARANCES:

FOR THE PLAINTIFF:

THOMAS HART
ATTORNEY AT LAW
1611 ALLEN STREET
BARNWELL, SOUTH CAROLINA
BY: KENNETH S. BURGI
ATTORNEY AT LAW
4526 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA

FOR DEFENDANTS OWENS-
ILLINOIS INC., OWENS CORNING
FIBERGLASS CORP., ET AL.:

SCHIFF, HARDIN & WAITE
BY: ROBERT H. RILEY
ATTORNEY AT LAW
7200 SEARS TOWER
CHICAGO, ILLINOIS

FOR DEFENDANTS L.A.Q.
AND JENSEN-SOUDERS
ASSOCIATES, INC.:

COOK & FRANKE S.C.
BY: THOMAS N. HARRINGTON
ATTORNEY AT LAW
660 EAST MASON STREET
MILWAUKEE, WISCONSIN

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EXAMINATION

6 BY MR. RILEY:

7 Q. FOR THE RECORD, SIR, WOULD YOU STATE
8 YOUR FULL NAME AGAIN, PLEASE, FOR THE COURT
9 REPORTER?

10 A. WILLIAM Z. FLUCK.

11 - DO YOU WANT -- DO YOU NEED THE MIDDLE INITIAL?

12 Q. NO. THAT'S ALL RIGHT.

13 LET THE RECORD REFLECT THIS IS THE DEPOSITION
14 OF WILLIAM Z. FLUCK TAKEN PURSUANT TO NOTICE AND
15 AGREEMENT OF COUNSEL PURSUANT TO THE APPLICABLE
16 RULES OF THE WISCONSIN STATUTES.

17 MR. BURGI: I'D LIKE TO LODGE AN OBJECTION
18 BRIEFLY AT THIS POINT THAT WE DO OBJECT TO THIS
19 DEPOSITION ON BEHALF OF PLAINTIFF. BY APPEARING
20 HERE TODAY WE DO NOT WAIVE OUR OBJECTION OR THE USE
21 OF THIS DEPOSITION; AND ALL OTHER OBJECTIONS ARE
22 RESERVED, EXCEPT THOSE WITH RESPECT TO THE PHRASING
23 OF QUESTIONS TODAY.

24 MR. RILEY: WELL, YOUR OBJECTIONS WILL BE
25 RESERVED AS THEY ARE RESERVED UNDER THE APPLICABLE
26 WISCONSIN STATUTES, AND IF YOU ARE PROPOSING A
27 STIPULATION THAT'S DIFFERENT FROM THAT, THAT'S
28 UNILATERAL, THAT'S NOT BEEN DISCUSSED.

1 WITH RESPECT TO YOUR OBJECTION TO THE TAKING
2 OF THIS DEPOSITION, IT TAKES ME A LITTLE BIT BY
3 SURPRISE GIVEN THE FACT THAT THERE HAVE BEEN
4 DISCUSSIONS BETWEEN COUNSEL FOR THE PLAINTIFF AND
5 MYSELF WITH RESPECT TO THE TAKING OF THESE
6 DEPOSITIONS AND THE SCHEDULING OF THESE DEPOSITIONS.

7 I UNDERSTAND, MR. BURGI, YOU DON'T HAVE ANY
8 PERSONAL KNOWLEDGE OF ANY OF THAT, AND YOU ARE HERE
9 AS A REPRESENTATIVE WHO GOT CALLED APPARENTLY AT
10 MIDNIGHT YOUR TIME LAST NIGHT TO COME TO THIS
11 DEPOSITION. AND I TAKE IT THAT SOMEBODY TOLD YOU TO
12 MAKE THE OBJECTION YOU JUST MADE. I THINK IT'S
13 INAPPROPRIATE, BUT THAT WILL BE RESOLVED AT SOME
14 FUTURE TIME I'M SURE.

15 MR. HARRINGTON: MAY I JUST ASK A QUESTION?
16 WHAT IS THE SPECIFIC BASIS OF YOUR OBJECTION FOR
17 OBJECTING TO THIS DEPOSITION?

18 MR. BURGI: WITH RESPECT TO THE MANNER IN
19 WHICH THE DEPOSITION WAS NOTICED.

20 MR. RILEY: WHAT'S WRONG WITH THE NOTICE?
21 WHAT'S WRONG WITH THE NOTICE?

22 MR. BURGI: I HAVEN'T THE NOTICE WITH ME
23 HERE TO DISCUSS THE DETAILS OF THE NOTICE.

24 MR. RILEY: I'VE GOT IT.

25 THE WITNESS: MAY I MAKE A COMMENT OFF THE
26 RECORD?

27 MR. RILEY: NO. NO. THAT'S NOT A GOOD
28 IDEA.

1 THE WITNESS: I'D LIKE TO SIMPLY SAY THAT
2 I'M SOMEWHAT HARD OF HEARING. AND SO IF I SHOULD
3 KNOW WHAT'S BEING SAID YOU HAVE TO RECOGNIZE THAT
4 YOU'LL HAVE TO SPEAK UP A LITTLE BIT.

5 MR. RILEY: WE'RE JUST NOW DOING WHAT
6 LAWYERS DO, BECAUSE THERE ARE SOME ISSUES THAT DON'T
7 RELATE DIRECTLY TO YOUR TESTIMONY, MR. FLUCK. WE
8 DON'T MEAN TO EXCLUDE YOU FROM THAT, BUT WE NEED TO
9 DO SOME SEPARATE BUSINESS.

10 I'M HANDING MR. BURGI A COPY OF THE DEPOSITION
11 NOTICE WHICH WAS DULY SERVED IN THIS CASE.

12 I'D LIKE TO KNOW WHAT YOUR OBJECTION TO THAT
13 NOTICE IS.

14 MR. BURGI: MR. HART WAS NOT ABLE TO BE
15 PRESENT HERE TODAY. IT'S MY UNDERSTANDING THAT HE
16 HAD AN OBJECTION, IN FACT, TO THE NOTICE AND THE
17 TIMING OF THE DEPOSITION.

18 MR. RILEY: I TALKED TO MR. HART YESTERDAY
19 AFTERNOON IN THE COURTHOUSE, AND HE DIDN'T LODGE ANY
20 SUCH OBJECTION TO THE NOTICE.

21 MR. BURGI: THIS IS A MATTER THAT CAN BE
22 RESOLVED AT A LATER POINT IN TIME.

23 MR. HARRINGTON: JUST SO THE RECORD IS
24 CLEAR, YOUR OBJECTION IS TO THE FORM OF THE NOTICE
25 AND THE TIMING OF THE DEPOSITION; IS THAT CORRECT?

26 MR. BURGI: TO THE DEPOSITION ITSELF.

27 MR. HARRINGTON: WELL, WE WANT TO GET THIS
28 CLEAR.

1 AS I UNDERSTAND IT, YOUR OBJECTION IS TO THE
2 NOTICE, THE FORM OF THE NOTICE BEING IMPROPER, OR AN
3 INSUFFICIENT AMOUNT OF TIME FOR THE NOTICE. IS THAT
4 CORRECT?

5 MR. BURGI: THERE MAY BE A PROBLEM,
6 ADDITIONALLY, WITH RESPECT TO THIS WITNESS IN
7 PARTICULAR.

8 MR. RILEY: WE WANT TO KNOW WHAT THAT
9 PROBLEM IS.

10 MR. HARRINGTON: IF IT'S SOMETHING THAT CAN
11 BE CURED WE SHOULD KNOW ABOUT IT RIGHT NOW, WHILE
12 WE'RE IN CALIFORNIA, INSTEAD OF HAVING TO MAKE A
13 SEPARATE TRIP BACK TO CALIFORNIA, WHICH IS EXPENSIVE
14 FOR THOSE OF US WHO ARE IN THE MIDWEST.

15 THAT'S WHY I THINK IT'S IMPORTANT THAT YOU
16 STATE CLEARLY AND SUCCINCTLY THE EXACT BASIS OF YOUR
17 OBJECTION TO THE DEPOSITION THIS MORNING.

18 MR. BURGI: WELL, IN ORDER TO DO SO, IN
19 ORDER TO STATE THE OBJECTION WITH MORE SPECIFICITY,
20 I WOULD HAVE TO CONTACT MR. HART.

21 MR. RILEY: LET ME PHRASE THE QUESTION A
22 LITTLE DIFFERENTLY, THEN.

23 ARE YOU AWARE OF ANY BASIS FOR OBJECTION OTHER
24 THAN THE ONES THAT YOU'VE MADE HERE?

25 MR. BURGI: I'M NOT AWARE OF THE SPECIFIC
26 BASIS.

27 THERE MAY BE A PROBLEM WITH RESPECT TO THIS
28 WITNESS, EXACTLY WHAT HE'S GOING TO BE CALLED FOR,

1 WITH RESPECT TO WHETHER OR NOT HE IS A PERCIPIENT
2 WITNESS OR AN EXPERT WITNESS.

3 THERE MAY BE A PROBLEM WITH RESPECT TO WHETHER
4 OR NOT HE WAS NOTICED AS A WITNESS.

5 THERE MAY BE A PROBLEM WITH RESPECT TO
6 DISCOVERY CUT-OFF.

7 IF YOU LIKE, WHEN WE TAKE A BREAK, I CAN GET
8 YOU MORE SPECIFICITY ON THE OBJECTION.

9 MR. RILEY: NO. YOU DON'T HAVE TO DO
10 ANYTHING TO PLEASE ME. I'M NOT INTERESTED IN HAVING
11 YOU MAKE -- ALL I WANT YOU TO DO IS MAKE THE RECORD
12 CLEAR AS TO WHAT YOUR OBJECTION IS, SINCE YOU'VE
13 GONE OUT OF YOUR WAY TO MAKE ONE.

14 I GUESS YOU'VE TOLD US EVERYTHING YOU CAN TELL
15 US ABOUT YOUR OBJECTION, SO LET'S GO ON.

16 Q. NOW THAT THAT'S DONE, MR. FLUCK,
17 OBVIOUSLY THE COURT REPORTER IS HERE TO TAKE DOWN
18 EVERYTHING THAT EVERYONE IN THE ROOM SAYS.
19 THEREFORE, IT'S IMPORTANT THAT WE ALL TRY TO TAKE
20 TURNS WHEN WE TALK.

21 WHEN I ASK A QUESTION, IF YOU'LL LET ME FINISH
22 THE QUESTION BEFORE YOU START TO ANSWER IT WILL BE
23 MUCH EASIER FOR THE COURT REPORTER TO TAKE DOWN THE
24 TRANSCRIPT AND THE TRANSCRIPT WILL READ MUCH MORE
25 LOGICALLY IF WE DO THAT.

26 IN ESSENCE, WE CAN'T TALK THE WAY WE WOULD IF
27 WE WERE JUST HAVING A CONVERSATION HERE IN YOUR
28 LIVING ROOM.

1 IT IS IMPORTANT, ALSO, FOR YOU TO HAVE ALL OF
2 YOUR ANSWERS MADE OUT LOUD USING WORDS AS OPPOSED TO
3 A GESTURE OR A NOD OR THE PHRASES WE ALL USE SUCH AS
4 "UH-HUH" OR "HUH-UH." BECAUSE AGAIN, THE COURT
5 REPORTER CAN'T TAKE THAT DOWN VERY EFFECTIVELY.

6 IF AT ANY TIME YOU DON'T UNDERSTAND ONE OF MY
7 QUESTIONS OR IF YOU HAVE ANY TROUBLE HEARING THE
8 QUESTION BECAUSE I'M NOT KEEPING MY VOICE UP, IF
9 YOU'LL PLEASE LET ME KNOW THAT I'LL DO A BETTER JOB
10 OF ASKING THE QUESTIONS SO THAT YOU HAVE A FAIR
11 OPPORTUNITY TO ANSWER MY QUESTIONS.

12 I DO WANT THE RECORD TO REFLECT THAT THIS
13 DEPOSITION IS GOING FORWARD IN YOUR LIVING ROOM,
14 MR. FLUCK, HERE IN LOMPOC, CALIFORNIA.

15 THAT'S CORRECT; ISN'T IT?

16 A. YES.

17 Q. YOU'VE BEEN VERY GRACIOUS TO HAVE US
18 HERE, AND I'M SURE ALL OF US THANK YOU FOR DOING
19 THAT.

20 IT'S MY UNDERSTANDING THAT YOU HAVE HESITENCY
21 TO TRAVEL, AND THERE IS A SITUATION WITH YOUR WIFE'S
22 HEALTH THAT MAKES IT VERY DIFFICULT FOR YOU TO
23 TRAVEL, AND YOU'VE ASKED THAT WE BE HERE AS OPPOSED
24 TO YOU GOING TO SOME OTHER AREA OF THE COUNTRY TO
25 GIVE THIS TESTIMONY. IS THAT CORRECT?

26 A. THAT'S RIGHT.

27 Q. AND DO I UNDERSTAND CORRECTLY THAT IT IS
28 VERY DIFFICULT BECAUSE OF YOUR WIFE'S HEALTH

1 SITUATION TO TRAVEL?

2 A. THAT'S CORRECT.

3 Q. OKAY. MR. FLUCK, COULD YOU TELL US
4 BRIEFLY WHAT YOUR EDUCATIONAL BACKGROUND IS, PLEASE?

5 A. I HAVE A BACHELOR OF SCIENCE DEGREE IN
6 CHEMICAL ENGINEERING FROM THE UNIVERSITY OF
7 WISCONSIN, 1935; A MASTERS DEGREE FROM THE
8 UNIVERSITY OF WISCONSIN IN ENGINEERING, 1937.

9 Q. DID YOU -- I'M SORRY. WERE YOU
10 FINISHED?

11 A. PLUS NUMEROUS EXTENSION COURSES
12 PERTINENT TO INDUSTRIAL HYGIENE.

13 Q. BEFORE YOU GRADUATED WITH A MASTERS IN
14 1937 DID YOU HAVE ANY FULL OR PART TIME JOB IN THE
15 INDUSTRIAL HYGIENE FIELD?

16 A. NO.

17 Q. OKAY. AFTER RECEIVING YOUR MASTERS IN
18 ENGINEERING IN 1937 WHAT DID YOU DO?

19 A. I WENT TO A THREE-WEEK SHORT COURSE OR
20 SEMINAR IN INDUSTRIAL HYGIENE GIVEN BY THE
21 U.S. PUBLIC HEALTH SERVICE IN WASHINGTON D.C.

22 Q. HOW WAS IT THAT YOU CAME TO BE INVITED
23 TO ATTEND THAT COURSE?

24 A. I HAD BEEN HIRED AS AN INDUSTRIAL
25 HYGIENE ENGINEER BY THE STATE OF WISCONSIN, AND THIS
26 COURSE WAS PRESENTED BY THE PUBLIC HEALTH SERVICE TO
27 INDOCTRINATE NEW INDUSTRIAL HYGIENISTS THAT JUST
28 ENTERED STATE WORK.

1 Q. NOW, HAD YOU JUST ENTERED STATE WORK OR
 2 WERE YOU ABOUT TO ENTER INTO STATE WORK?

3 A. I HAD JUST ENTERED.

4 Q. OKAY. AND WHAT JOB HAD YOU TAKEN?

5 A. I WAS AN INDUSTRIAL -- THE JOB WAS
 6 CALLED INDUSTRIAL HYGIENE ENGINEER, WISCONSIN STATE
 7 BOARD OF HEALTH.

8 Q. OKAY. WERE THERE OTHERS WORKING FOR THE
 9 WISCONSIN STATE BOARD OF HEALTH IN SIMILAR
 10 CAPACITIES AT THE TIME YOU JOINED?

11 A. NO. I WAS ONE OF THE ORIGINAL GROUP
 12 THAT FORMED THE INDUSTRIAL HYGIENE UNIT OF THE
 13 WISCONSIN STATE BOARD OF HEALTH.

14 Q. WHO WERE THE OTHER MEMBERS OF THAT
 15 GROUP?

16 A. DR. PAUL BREHM WAS THE MEDICAL DIRECTOR,
 17 A MR. HAROLD RUFF WAS THE OTHER ENGINEER. AND THAT
 18 WAS THE ENTIRE INDUSTRIAL HYGIENE UNIT.

19 Q. OKAY. NOW LET'S GET BACK TO THE UNITED
 20 STATES PUBLIC HEALTH SERVICE AND THIS SEMINAR.

21 WAS THERE SOME RELATIONSHIP BETWEEN THE
 22 ACTIVITIES OF THE UNITED STATES PUBLIC HEALTH
 23 SERVICE AND THE FORMATION OF THE WISCONSIN
 24 INDUSTRIAL HYGIENE UNIT?

25 A. YES. THE FORMATION OF THE INDUSTRIAL
 26 HYGIENE UNIT WAS MORE OR LESS AT THE INSTIGATION OF
 27 THE PUBLIC HEALTH SERVICE. AT THAT TIME THEY WERE
 28 PROMOTING A RELATIVELY NEW FIELD, INDUSTRIAL

1 HYGiene. THEY CONTACTED THE VARIOUS STATES AND
2 ENCOURAGED THEM TO ESTABLISH UNITS, AND WISCONSIN
3 WAS ONE OF THE MANY STATES THAT DID.

4 Q. WHAT DID YOU STUDY DURING THIS THREE
5 WEEK COURSE IN WASHINGTON D.C.?

6 A. WE STUDIED JUST ABOUT EVERYTHING THAT
7 WAS KNOWN ABOUT INDUSTRIAL HYGIENE AT THE TIME.

8 Q. WAS THAT A GREAT DEAL OR --

9 A. NOT TOO MUCH, IF YOU CAN PRESENT IT IN
10 THREE WEEKS.

11 INDUSTRIAL HYGIENE WAS A RELATIVELY NEW FIELD.

12 Q. HOW MANY STATES WERE REPRESENTED BY
13 INDIVIDUALS ATTENDING THIS SHORT COURSE IN
14 WASHINGTON D.C.?

15 A. THERE WERE ON THE ORDER OF 25 TO 30. I
16 DON'T REMEMBER THE EXACT NUMBER.

17 Q. WHAT WAS THE FOCUS OF THE COURSE WHEN IT
18 CAME TO AIRBORNE MATERIALS WHICH MIGHT PRESENT A
19 HEALTH HAZARD IN THE WORK PLACE, IF THERE WAS A
20 FOCUS?

21 WAS THIS A FOCUS ON CERTAIN SUBSTANCES AS
22 BEING OF THE GREATEST CONCERN?

23 MR. BURGI: I'M GOING TO OBJECT TO THE
24 QUESTION AS VAGUE AND AMBIGUOUS.

25 MR. RILEY:

26 Q. YOU GO AHEAD. THAT'S ALL RIGHT. THAT'S
27 LAWYER TALK.

28 A. EACH CATEGORY OF INDUSTRIAL -- OF

1 POTENTIAL INDUSTRIAL HAZARD WAS DISCUSSED IN GENERAL
2 AND THEN DETAILED DISCUSSIONS WERE MADE ON THE MORE
3 IMPORTANT SUBSTANCES WITHIN A CATEGORY -- BY
4 CATEGORIES, I MEAN SUCH THINGS AS DUSTS, FUMES,
5 VAPORS, GASES -- EACH WAS DISCUSSED IN GENERAL AND
6 THEN SPECIFIC, DETAILED INFORMATION ON THE MORE
7 IMPORTANT MATERIALS WITHIN EACH CATEGORY.

8 Q. AND IN THE CATEGORY OF DUST, WHAT WERE
9 THE MORE IMPORTANT MATERIALS THAT WERE DISCUSSED, IF
10 YOU RECALL?

11 A. WELL, OF COURSE, THE EMPHASIS WAS ON
12 SILICOSIS, WHICH WAS CONSIDERED THE MOST IMPORTANT
13 DUST DISEASE. OTHER DUSTS WERE MENTIONED AND SOME
14 DISCUSSION ON THEM, BUT SILICOSIS OCCUPIED PERHAPS
15 70 PERCENT OF THE DISCUSSION.

16 Q. DO YOU RECALL WHETHER THERE WAS ANY
17 DISCUSSION WITH RESPECT TO ASBESTOS?

18 A. I DO NOT RECALL THAT SPECIFICALLY, NO.

19 MR. BURGI: DID WE ESTABLISH THE YEAR OF
20 THIS CONFERENCE?

21 MR. RILEY: I BELIEVE MR. FLUCK SAID 1937.

22 Q. YOU DID, DIDN'T YOU?

23 A. 1937.

24 MR. BURGI: THANK YOU.

25 MR. RILEY:

26 Q. CAN YOU TELL ME WHO WAS ON THE FACULTY
27 FOR THIS SHORT COURSE?

28 I REALIZE IT'S BEEN A NUMBER OF YEARS, BUT CAN

1 YOU REMEMBER ANY OF THE NAMES?

2 A. AS FAR AS I REMEMBER THEY WERE ALL
 3 REPRESENTATIVES OF THE U.S. PUBLIC HEALTH SERVICE,
 4 DIVISION OF INDUSTRIAL HYGIENE.

5 Q. OKAY.

6 A. I CAN REMEMBER THE NAME J.J. *BLOOMFIELD* *BLUMFIELD*,¹⁷
 7 BECAUSE HE TOOK A VERY LARGE PART IN THE DISCUSSION.
 8 I BELIEVE HE WAS AN ENGINEER.

9 THERE ALSO WERE DOCTORS, AND EACH -- LET'S
 10 SEE. THERE WAS A DR. SAYERS, S-A-Y-E-R-S, I BELIEVE
 11 HIS FIRST NAME WAS ROYD, WHO WAS THE CHIEF SURGEON
 12 FOR THE INDUSTRIAL HYGIENE DIVISION OF THE PUBLIC
 13 HEALTH SERVICE. THERE WAS A MR. RICHARD PAGE WHO
 14 DISCUSSED DUST COUNTING TECHNIQUES. I CAN'T
 15 REMEMBER --

16 Q. OKAY.

17 A. -- ANY MORE NAMES.

18 Q. AFTER THIS SHORT COURSE WAS OVER DID YOU
 19 THEN COME BACK TO WISCONSIN?

20 A. YES. WE CAME BACK TO WISCONSIN AND
 21 IMMEDIATELY ORGANIZED THE INDUSTRIAL HYGIENE UNIT OF
 22 THE WISCONSIN BOARD OF HEALTH.

23 Q. DID THAT INDUSTRIAL HYGIENE UNIT INVOLVE
 24 THE SAME THREE PEOPLE YOU IDENTIFIED BEFORE, THAT
 25 BEING MR. BREHM, MR. RUFF AND YOURSELF?

26 A. THAT'S CORRECT, YES. THAT'S CORRECT.
 27 PLUS A SECRETARY WHO HADN'T GONE TO THE COURSE.

28 Q. HOW LONG DID YOU WORK AT THE INDUSTRIAL

1 HYGIENE UNIT FOR THE STATE BOARD OF HEALTH?

2 A. FROM MAY 1937 UNTIL THE SUMMER OF '43,
 3 WHEN I WENT INTO THE SERVICE. I CAN'T TELL YOU THE
 4 EXACT MONTH.

5 THEN WHEN I GOT OUT OF THE SERVICE IN 1946 I
 6 RETURNED TO THE INDUSTRIAL HYGIENE UNIT AND STAYED
 7 WITH THEM UNTIL DECEMBER 1949.

8 Q. NOW DURING THE ENTIRE LENGTH OF TIME
 9 THAT YOU WERE AT THE INDUSTRIAL HYGIENE UNIT WAS
 10 YOUR POSITION THE SAME OR DID THAT CHANGE AT SOME
 11 POINT?

12 A. IT WAS THE SAME FOR MOST OF THAT PERIOD.
 13 I WAS, HOWEVER, ACTING DIRECTOR FOR A VERY SHORT
 14 TIME IN LATE '48 OR '49, UPON THE DEATH OF DR.
 15 BREHM, THE DIRECTOR. I FRANKLY DON'T KNOW WHETHER I
 16 EVER OFFICIALLY HELD THE TITLE OR NOT, BUT I WAS THE
 17 ACTING DIRECTOR FOR A SHORT PERIOD.

18 Q. OKAY. DURING THE TIME THAT YOU WERE IN
 19 THE SERVICE DID ANY OF YOUR SERVICE INVOLVE
 20 INDUSTRIAL HYGIENE WORK?

21 BY THAT, I'M TALKING ABOUT THE PERIOD FROM THE
 22 SUMMER OF 1943 UNTIL 1946.

23 A. YES. YES.

24 Q. OKAY. NOW AFTER YOU LEFT THE INDUSTRIAL
 25 HYGIENE UNIT IN 1949, WHAT DID YOU DO?

26 A. I TOOK A JOB AS INDUSTRIAL HYGIENIST FOR
 27 THE NAVY, AT THE NAVAL AIR STATION, NORTH ISLAND,
 28 SAN DIEGO, CALIFORNIA.

1 Q. HOW LONG DID YOU REMAIN IN THE NAVY
2 BEGINNING WITH THAT STINT IN '49?

3 A. IT COVERED A PERIOD FROM JANUARY 1950
4 THROUGH SOMETIME IN '55, BUT WITH A 21-MONTH PERIOD
5 TAKEN OUT OF THAT FOR ACTIVE MILITARY DUTY.

6 I CAN'T GIVE YOU THE EXACT DATES WITHOUT
7 LOOKING UP MY RECORDS, BUT IT COVERED FIVE YEARS,
8 WITH 21 MONTHS -- APPROXIMATELY FIVE YEARS, WITH
9 21 MONTHS DELETED.

10 MR. BURGI: I'M SORRY. DID YOU SAY 1950 OR
11 1940?

12 THE WITNESS: 1950.

13 MR. BURGI: THANK YOU.

14 THE WITNESS: JANUARY 1950 IS WHEN I STARTED
15 WITH THEM.

16 MR. RILEY:

17 Q. WERE YOU AN INDUSTRIAL HYGIENIST FOR THE
18 NAVY DURING THE ENTIRE FIVE YEARS?

19 A. THAT'S RIGHT.

20 Q. INCLUDING WHEN YOU WERE ON ACTIVE DUTY?

21 A. NO. NO. THE 21 MONTHS ACTIVE DUTY WAS
22 WITH THE AIR FORCE.

23 Q. WERE YOU AN INDUSTRIAL HYGIENIST FOR THE
24 AIR FORCE DURING THE 21 MONTHS OR DID YOU DO
25 SOMETHING ELSE?

26 A. IT WASN'T EXACTLY INDUSTRIAL HYGIENE.
27 IT WAS CALLED VARIOUS THINGS, INCLUDING
28 BIO-ENVIRONMENTAL ENGINEERING, BUT PART OF THE WORK

1 WAS INDUSTRIAL HYGIENE.

2 Q. WHAT DID YOU DO IN 1955 WHEN YOU LEFT
3 THE NAVY?

4 A. I WENT TO THE OFFICE OF THE SURGEON
5 GENERAL, AIR FORCE, IN WASHINGTON D.C.

6 Q. WHAT WAS YOUR JOB?

7 A. BIO-ENVIRONMENTAL ENGINEER.

8 Q. WHAT DOES A BIO-ENVIRONMENTAL ENGINEER
9 DO?

10 A. ALMOST THE SAME AS AN INDUSTRIAL
11 HYGienIST, BUT A BROADER FIELD, SOMEWHAT BROADER.
12 IN OTHER WORDS, APPLYING THE TECHNICAL KNOWLEDGE TO
13 THE CONTROL OF ENVIRONMENTAL FACTORS THAT AFFECT THE
14 HEALTH OF PEOPLE.

15 Q. OKAY.

16 NOW, HOW LONG DID YOU STAY WITH THE OFFICE OF
17 THE SURGEON GENERAL AIR FORCE?

18 A. 21 MONTHS.

19 I WOULD LIKE TO CORRECT THAT --

20 Q. OKAY.

21 A. -- A BIT. I ACTUALLY SPENT
22 APPROXIMATELY ONE MONTH AT WRIGHT PATTERSON AIR BASE
23 PRIOR TO GOING WITH THE SURGEON GENERAL --

24 Q. OKAY.

25 A. -- IN THE INDUSTRIAL HYGIENE FIELD
26 THERE.

27 Q. ALL RIGHT. AFTER YOUR 21 MONTHS WITH
28 THE OFFICE OF THE SURGEON GENERAL AIR FORCE WHAT DID

1 YOU DO?

2 A. I WENT BACK TO THE JOB WITH THE NAVY AT
3 NAVAL AIR STATION, NORTH ISLAND.

4 Q. WAS THIS ONCE AGAIN IN THE POSITION OF
5 AN INDUSTRIAL HYGIENIST?

6 A. THAT'S RIGHT.

7 Q. HOW LONG DID YOU REMAIN WITH THE NAVY
8 COMMENCING IN 1957?

9 A. THAT'S NOT '57.

10 Q. OKAY. WHEN WAS IT? YOU TELL ME.

11 A. IN THERE WAS A PERIOD FROM '54 THROUGH
12 '55 THAT I STAYED WITH THEM. MY TOTAL TIME WITH THE
13 NAVY WAS FROM '51 THROUGH '55, WITH 21 MONTHS OUT,
14 21 MONTHS DELETED IN THE MIDDLE OF THAT PERIOD --

15 Q. RIGHT.

16 A. -- TO GO WITH THE SURGEON GENERAL AIR
17 FORCE.

18 Q. OKAY. DID YOU LEAVE THE NAVY IN 1955?
19 THAT'S WHERE I MAY BE A LITTLE CONFUSED.

20 A. TO THE BEST OF MY RECOLLECTION.

21 Q. ALL RIGHT. WHAT DID YOU DO WHEN YOU
22 LEFT THE NAVY?

23 A. I WENT BACK ON ACTIVE DUTY WITH THE AIR
24 FORCE.

25 Q. ALL RIGHT. AND HOW LONG DID THAT ACTIVE
26 DUTY STINT LAST?

27 A. UNTIL MAY OF 1971.

28 Q. WHAT WAS YOUR POSITION WITH THE AIR

1 FORCE DURING THIS PERIOD?

2 A. BIO-ENVIRONMENTAL ENGINEER.

3 Q. ALL RIGHT. WHAT DID YOU DO IN 1971?

4 A. RETIRED FROM THE AIR FORCE.

5 Q. OKAY. AND DID YOU TAKE ANY OTHER
6 POSITION IN 1971?

7 A. NO.

8 Q. OKAY. SINCE 1971 HAVE YOU HELD ANY
9 POSITIONS, CONSULTING POSITIONS, OR OTHER TYPES OF
10 EMPLOYMENT?

11 A. NO.

12 Q. ALL RIGHT. NOW I DID NOT ASK YOU THIS
13 AS WE WENT THROUGH THERE THE TYPE OF WORK THAT YOU
14 DID FOR THE INDUSTRIAL HYGIENE UNIT OF THE STATE
15 BOARD OF HEALTH OF WISCONSIN.

16 I'D LIKE TO CONCENTRATE ON THAT PERIOD OF TIME
17 FROM 1937 TO 1949, AND ASK YOU TO DESCRIBE HOW IT
18 WAS THAT THE INDUSTRIAL HYGIENE UNIT GOT STARTED,
19 WHAT DID IT DO?

20 MR. BURGI: I'M GOING TO OBJECT TO THE
21 QUESTION ON THE GROUNDS IT CALLS FOR SPECULATION.

22 MR. RILEY: SPECULATION?

23 MR. BURGI: YES. THERE MAY BE ASPECTS OF
24 THE DEPARTMENT THAT HE'S NOT FAMILIAR WITH THAT YOU
25 ARE CALLING FOR IN YOUR QUESTION.

26 MR. RILEY:

27 Q. JUST TALK ABOUT THOSE THINGS YOU ARE
28 FAMILIAR WITH.

1 APPARENTLY, COUNSEL IS AFRAID YOU ARE GOING TO
2 MAKE SOMETHING UP.

3 I ONLY WANT YOU TO TELL ME WHAT YOU KNOW FROM
4 YOUR EXPERIENCE THAT THE INDUSTRIAL HYGIENE UNIT --

5 A. WHAT I DID WITH THE INDUSTRIAL HYGIENE
6 UNIT?

7 Q. YES, SIR.

8 A. OUR JOB PRIMARILY WAS TO MAKE STUDIES OF
9 INDUSTRIAL OPERATIONS, FACTORIES GENERALLY, TO
10 DETERMINE IF THERE WERE ANY POTENTIAL HEALTH
11 HAZARDS; AND IF SO, THE DEGREE OF THAT HAZARD. AND
12 IF ANY POTENTIAL HAZARD WERE FOUND TO RECOMMEND
13 CONTROL PROCEDURES TO ALLEVIATE THE PROBLEM.

14 Q. NOW, HOW DID YOU GO ABOUT ACCOMPLISHING
15 THOSE THINGS?

16 A. (NO AUDIBLE RESPONSE.)

17 Q. FOR EXAMPLE, HOW WAS IT THAT A STUDY
18 TOOK PLACE?

19 A. DO YOU MEAN THE MECHANISM OF A STUDY?
20 WHAT WE DID DURING THE STUDY?

21 Q. NO, SIR.

22 RIGHT NOW I'M TRYING TO FIND OUT HOW IT WAS
23 THAT YOU CAME TO DO A STUDY IN A PARTICULAR PLACE AT
24 A PARTICULAR TIME.

25 A. THERE WERE A NUMBER OF REASONS FOR
26 MAKING A STUDY.

27 INDUSTRIAL HYGIENE BEING A VERY NEW FIELD WE
28 INSTIGATED SOME OF THE STUDIES OURSELVES. WE WOULD

1 LOOK THROUGH THE LITERATURE OR TALK TO OTHERS IN THE
2 FIELD OR SURVEY INDUSTRIES IN WISCONSIN AND PICK OUT
3 AN INDUSTRY THAT WE THOUGHT NEEDED A STUDY OR COULD
4 BENEFIT FROM A STUDY.

5 FOR INSTANCE, WE PROBABLY STARTED WITH THE
6 FOUNDRY INDUSTRY BECAUSE OF THE HISTORY OF SILICOSIS
7 AS A VERY COMMON OCCUPATIONAL DISEASE. AND THERE
8 HAD BEEN CASES OF SILICOSIS IN WISCONSIN, SO WE MADE
9 QUITE A DETAILED SURVEY OF THE FOUNDRY INDUSTRY.

10 PROBABLY FOLLOWING THAT OR MAYBE JUST PRIOR TO
11 IT WE ALSO STUDIED SILICOSIS IN THE GRANITE CUTTING
12 INDUSTRY, THE MINING OR QUARRYING OF GRANITE AND THE
13 MANUFACTURING PROCESSES.

14 SOMEWHERE ALONG THE LINE, STILL TALKING
15 SILICOSIS, WE STUDIED THE -- DID I START WITH
16 FOUNDRY?

17 Q. YES, SIR.

18 A. WELL, THEN WE WENT INTO ANY OF THE OTHER
19 SILICOSIS POTENTIAL INDUSTRIES WE COULD THINK OF,
20 SUCH AS MINING OF SILICA SAND, THE USE OF SANDSTONE
21 AND GRINDING WHEELS -- THIS ISN'T AN INDUSTRY, BUT
22 IT'S A PROCESS THAT ONE WOULD FIND IN VARIOUS
23 INDUSTRIES.

24 AT THE SAME TIME WE WOULD RESPOND TO ANY
25 REQUESTS FOR SURVEYS THAT HAD POTENTIAL -- WHERE
26 POTENTIAL HAZARDS WERE INVOLVED IN INDUSTRY. THESE
27 REQUESTS COULD COME FROM THE INDUSTRIAL COMMISSION
28 OF WISCONSIN, WHICH IS A REGULATORY AGENCY IN

1 MATTERS OF SAFETY, IT COULD COME FROM WORKERS
2 GROUPS, IT COULD COME FROM THE MANAGEMENT LEVEL OF
3 INDUSTRY. THOSE ARE THE MAIN REASONS FOR
4 INSTIGATING STUDIES.

5 Q. OKAY. WHEN IT WAS DETERMINED THAT A
6 STUDY WOULD BE DONE, EITHER INSTIGATED BY THE
7 INDUSTRIAL HYGIENE UNIT ITSELF OR BY A REQUEST FROM
8 SOME OF THE TYPES OF SOURCES YOU'VE JUST IDENTIFIED,
9 WHAT PROCEDURES WERE FOLLOWED THEN BY THE INDUSTRIAL
10 HYGIENE UNIT IN ORDER TO CARRY OUT THAT STUDY?

11 A. IF IT WERE SOMETHING NEW TO US OR
12 RELATIVELY NEW WE WOULD MAKE AN EXTENSIVE SEARCH OF
13 THE LITERATURE TO LEARN EVERYTHING WE COULD ON THE
14 SUBJECT.

15 OCCASIONALLY, WE WOULD CONTACT THE PUBLIC
16 HEALTH SERVICE FOR ADVICE IF THERE WAS SOME POINT
17 THAT WE WEREN'T SURE OF, AND THEN WE WOULD DETERMINE
18 THE PROPER ANALYTICAL PROCEDURES TO USE OR SAMPLING
19 PROCEDURES TO USE AND THEN GO AND DO OUR TESTING.

20 Q. OKAY. NOW IF YOU WERE OUT THERE
21 SAMPLING SAY AIRBORNE DUST, ONCE THE SAMPLING WAS
22 DONE THEN WHAT PROCEDURES WERE FOLLOWED IN ORDER TO
23 ANALYZE THAT?

24 A. WE WOULD TAKE IT BACK TO OUR LABORATORY,
25 INDUSTRIAL HYGIENE LABORATORY AND SUBSEQUENTLY MAKE
26 THE ANALYSES OR COUNTS OURSELVES.

27 MR. RUFF OR I WOULD DO THE WORK. OCCASIONALLY
28 WE GOT SOME HELP FROM THE STATE LABORATORY OF

1 HYGIENE. IF IT WERE ON SOME ANALYTICAL PROCEDURE WE
2 WEREN'T TOO SURE OF OURSELVES WE WOULD GET SOME HELP
3 FROM THEM IN THE EARLY STAGES, TEACHING US
4 TECHNIQUES AND SO FORTH.

5 Q. NOW YOU MADE A REFERENCE TO COUNTS.
6 AGAIN, IF YOU ARE DOING A STUDY OF AIRBORNE DUST
7 DOES THE COUNT REFER TO HOW MUCH OF A CERTAIN
8 SUBSTANCE YOU FOUND?

9 A. THE METHOD OF EVALUATING THE EXTENT OF
10 THE POTENTIAL HAZARD FOR A DUST IN THOSE DAYS WAS
11 DUST COUNTING, AND THE STANDARDS WERE GIVEN IN TERMS
12 OF MILLION OF PARTICLES PER CUBIC FOOT.

13 Q. WHERE DID THOSE STANDARDS COME FROM?

14 A. THOSE STANDARDS CAME PRIMARILY FROM THE
15 U.S. PUBLIC HEALTH SERVICE. SOME OF THEM CAME FROM
16 THE U.S. BUREAU OF STANDARDS, BUT THEY WERE THEN
17 INTEGRATED INTO THE LISTING THAT THE PUBLIC HEALTH
18 SERVICE HAD.

19 AND SOMEWHERE ALONG THE LINE IN POINT OF TIME,
20 SOMEWHERE PRIOR TO 1948, A COMMITTEE WAS SET UP IN
21 THE ORGANIZATION CALLED THE AMERICAN CONFERENCE OF
22 GOVERNMENTAL INDUSTRIAL HYGIENISTS THAT EVALUATED
23 ALL THE KNOWN STANDARDS OR ALL THE SUGGESTED
24 STANDARDS FOR HAZARDOUS MATERIALS AND PUBLISHED A
25 LIST OF RECOMMENDED MAXIMUM ALLOWABLE CONCENTRATIONS
26 AS IT WAS CALLED IN THOSE DAYS. IT GOES BY VARIOUS
27 OTHER NAMES NOW.

28 Q. OKAY.

1 A. I MIGHT SAY THAT THAT GROUP, THE
2 COMMITTEE ON THRESHOLD LIMIT VALUES OF THE AMERICAN
3 INDUSTRIAL -- AMERICAN CONFERENCE OF GOVERNMENTAL
4 INDUSTRIAL HYGIENISTS IS STILL WORKING AT THAT
5 PARTICULAR JOB -- NEW COMMITTEE MEMBERS, OBVIOUSLY
6 -- AND THEY ANNUALLY PUBLISH A LIST OF SUGGESTED
7 VALUES. IT ACTUALLY REVISES THE LIST OF VALUES
8 BASED ON THE LATEST SCIENTIFIC DATA.

9 Q. OKAY. FOR A SHORTHAND TERM CAN WE REFER
10 TO THE AMERICAN CONFERENCE OF GOVERNMENT AND
11 INDUSTRIAL HYGIENIST AS THE A.C.G.I.H.? IS THAT HOW
12 IT WAS COMMONLY REFERRED TO --

13 A. THAT'S THE WAY --

14 Q. -- DURING YOUR -- I'M SORRY.

15 A. THAT'S WHAT IT'S CALLED.

16 Q. DURING THE TIME THAT YOU WORKED AT THE
17 INDUSTRIAL HYGIENIST -- I'M SORRY, THE INDUSTRIAL
18 HYGIENE UNIT, DID YOU CONSIDER THE MAXIMUM ALLOWABLE
19 CONCENTRATIONS ESTABLISHED BY THE A.C.G.I.H. TO BE
20 AUTHORITATIVE AND RELIABLE?

21 A. THEY WERE THE BEST THAT WAS AVAILABLE.
22 THE MOST AUTHORITATIVE, YES.

23 Q. ALL RIGHT. NOW YOU'VE DESCRIBED TAKING
24 COUNTS ON THE ONE HAND, AND YOU'VE DESCRIBED THESE
25 MAXIMUM ALLOWABLE CONCENTRATIONS.

26 WAS THERE A COMPARISON MADE BETWEEN THE COUNT
27 THAT YOU ACTUALLY FOUND AND THE MAXIMUM ALLOWABLE
28 CONCENTRATION THAT YOU REFERRED TO?

1 A. YES. THAT WAS THE WAY OF EVALUATING
2 WHETHER THERE WAS OR WAS NOT A HAZARD.

3 Q. OKAY. AND COULD YOU DESCRIBE FOR ME
4 THEN WHAT THE MAXIMUM ALLOWABLE CONCENTRATION WAS
5 FOR A GIVEN SUBSTANCE AS YOU UNDERSTOOD IT?

6 A. ARE YOU ASKING ABOUT A PARTICULAR
7 SUBSTANCE?

8 Q. OKAY. WE CAN GET INTO THAT WHEN WE GET
9 INTO PARTICULAR SUBSTANCES BUT --

10 A. THERE WERE DIFFERENT MAXIMUM ALLOWABLE
11 CONCENTRATIONS FOR DIFFERENT MATERIALS.

12 Q. CORRECT.

13 AND I'M NOT ASKING FOR THE NUMBER NOW, I'M
14 JUST ASKING YOU TO EXPLAIN TO US WHAT A MAXIMUM
15 ALLOWABLE CONCENTRATION FOR ANY GIVEN SUBSTANCE WAS.

16 WHAT DID IT MEAN IN THE INDUSTRIAL HYGIENE
17 FIELD?

18 A. IN BROADEST TERMS, IT WAS CONSIDERED THE
19 CONCENTRATION THAT A PERSON COULD TOLERATE EIGHT
20 HOURS A DAY THROUGHOUT A LIFETIME OF WORK WITHOUT
21 ADVERSE EFFECT, EITHER ON SHORT EXPOSURE OR, AS I
22 SAID, PROLONGED EXPOSURE FOR A LIFETIME.

23 Q. OKAY.

24 A. IT WAS NOT A HARD AND FAST LEVEL.

25 IN OTHER WORDS, IT WAS CONSIDERED A VERY SAFE
26 LEVEL. THERE ARE FACTORS OF SAFETY BUILT INTO IT.

27 Q. OKAY. WHEN MAKING THE DUST COUNTS AND
28 COMPARING THEM TO THE MAXIMUM ALLOWABLE

1 CONCENTRATIONS, IF THE DUST COUNTS WERE BELOW THE
2 MAXIMUM ALLOWABLE CONCENTRATION, WHAT IN A GENERAL
3 SENSE DID THAT INDICATE?

4 A. IT INDICATED A NUMBER OF THINGS.

5 IT INDICATED THAT VERY LIKELY THAT WAS A SAFE
6 OPERATING PROCEDURE IF ENOUGH COUNTS HAD BEEN MADE
7 OVER VARIABLE CONDITIONS.

8 IT ALSO MEANT TO US, FROM THE STANDPOINT OF
9 CONTROL, THAT THE PLANT WAS OPERATING UNDER -- I
10 HESITATE, I'M SEARCHING FOR THE WORD -- ALMOST
11 IDEALIZED -- ALMOST IDEAL CONDITIONS. IT WAS
12 OPERATING IN A SAFE MANNER AND UNDER THE BEST OF
13 PRACTICES FOR THE INDUSTRY.

14 THESE LIMIT VALUES WERE USED AS A MEANS OF
15 DETERMINING WHETHER THE PLANT WAS DOING A GOOD JOB
16 OF TRYING TO CONTROL ITS PROBLEM.

17 Q. OKAY. NOW YOU MADE A REFERENCE IN
18 DESCRIBING THE MAXIMUM ALLOWABLE CONCENTRATIONS TO
19 EIGHT HOURS A DAY FOR A LIFETIME.

20 DOES THAT HAVE SOMETHING TO DO WITH THE TERM
21 TIME WEIGHTED AVERAGE?

22 A. YES.

23 OBVIOUSLY, IF IT CAN TOLERATE A CERTAIN LEVEL
24 CONTINUOUS IT CAN TOLERATE HIGHER LEVELS FOR SHORT
25 PERIODS OF TIME. SO, WE USED A TECHNIQUE OF TIME
26 WEIGHTING THE AVERAGE.

27 Q. JUST SO WE'RE CLEAR ON WHAT THAT MEANS:
28 IF YOU HAD ONE PARTICULAR AREA IN A PLANT WHERE THE

1 DUST COUNT WAS ABOVE THE MAXIMUM ALLOWABLE
2 CONCENTRATION BUT EXPOSURE WAS FOR ONLY A BRIEF
3 PERIOD OF TIME DURING THE DAY, WHAT DOES TIME
4 WEIGHTED AVERAGE HAVE TO DO THEN WITH
5 UNDERSTANDING --

6 A. WELL --

7 Q. -- THE DUST COUNT?

8 A. A ROUGH EXAMPLE WOULD BE IF A LIMIT WERE
9 TEN FOR EIGHT-HOUR DAY EXPOSURE AND A PERSON WERE
10 ONLY EXPOSED FOR HALF THAT TIME, YOU COULD EXPECT
11 THEM TO TOLERATE TWICE AS MUCH. THAT'S NOT TRUE ALL
12 THE WAY UP AND DOWN THE LINE, THAT'S JUST AN
13 EXAMPLE.

14 Q. IS IT POSSIBLE THEN WHEN YOU WERE DOING
15 THESE STUDIES FOR THE INDUSTRIAL HYGIENE UNIT THAT
16 IF YOU FOUND A DUST COUNT IN A PARTICULAR LOCATION
17 IN A PLANT THAT WAS ABOVE THE MAXIMUM ALLOWABLE
18 CONCENTRATION THAT YOU WOULD STILL CONSIDER THE
19 OVERALL EXPOSURE IN THE WORK PLACE TO BE WITHIN THIS
20 SAFE LEVEL YOU'VE DESCRIBED IF THE AMOUNT OF TIME
21 INVOLVED IN BEING EXPOSED TO THE HIGH LEVEL WAS VERY
22 SHORT?

23 A. THAT'S RIGHT.

24 IF A PERSON WERE EXPOSED TO A LEVEL HIGHER
25 THAN THE PERMISSIBLE, THE M.A.C., FOR A SHORT TIME
26 AND THEN EXPOSED TO A ZERO CONCENTRATION OR MUCH
27 LOWER CONCENTRATION, ONE WOULD CONSIDER WHAT HIS
28 EXPOSURE FOR THE DAY WAS, HIS AVERAGE EXPOSURE.

1 AVERAGE WOULD BE A GOOD TERM -- TIME WEIGHTED.

2 Q. OKAY. SO IN DETERMINING, MAKING THESE
3 COUNTS AND ANALYZING THEM AS PART OF YOUR STUDIES
4 WITH REGARD TO THE INDUSTRIAL HYGIENE IN THE PLANT,
5 IS IT CORRECT THAT YOU TOOK INTO ACCOUNT THE DUST
6 COUNT AS WELL AS THE TIME DURING WHICH SOMEONE MIGHT
7 BE EXPOSED TO A PARTICULAR DUST COUNT?

8 A. THAT'S RIGHT.

9 Q. NOW DURING THE ENTIRE PERIOD THAT YOU
10 WORKED FOR THE INDUSTRIAL HYGIENE UNIT OF THE
11 WISCONSIN STATE BOARD OF HEALTH DID YOUR TESTING
12 EVER INCLUDE DUSTS WHICH INCLUDED ASBESTOS AS PART
13 OF THE COMPOSITION?

14 A. YES.

15 Q. ON HOW MANY OCCASIONS DID YOU TEST THE
16 ATMOSPHERE IN THE WORK PLACE FOR ASBESTOS DUST?

17 A. DO YOU MEAN HOW MANY DIFFERENT
18 FACTORIES?

19 Q. YES, SIR. HOW MANY DIFFERENT LOCATIONS.

20 A. I CAN ONLY RECALL TWO, AND I CAN'T EVEN
21 NAME ONE OF THEM.

22 Q. GIVE US THE ONE YOU CAN NAME, PLEASE.

23 A. THE ONE I CAN NAME?

24 Q. YES, SIR.

25 A. IT WENT BY VARIOUS NAMES, BUT IT'S
26 PROBABLY CALLED ALGOMA PLYWOOD. AT ONE TIME IT WAS
27 A BRANCH OF U.S. PLYWOOD, AND IT'S HAD VARIOUS
28 NAMES, BUT ALGOMA PLYWOOD WAS THE ONE I REMEMBER.

1 Q. IF FOR THE REST OF THIS DEPOSITION I
2 REFERRED TO THAT AS THE ALGOMA PLANT, WOULD YOU HAVE
3 IT CLEAR IN YOUR MIND, REGARDLESS OF WHO THE OWNERS
4 MIGHT HAVE BEEN FROM TIME TO TIME, WHAT WE WERE
5 TALKING ABOUT?

6 A. YES.

7 Q. AND WE WOULD BE TALKING ABOUT THE SAME
8 LOCATION --

9 A. YES.

10 Q. -- ON EACH INSTANCE; CORRECT?

11 A. YES.

12 Q. ALL RIGHT. THEN LET'S USE THE TERM
13 ALGOMA PLANT.

14 DURING THIS PERIOD OF TIME THAT YOU WERE
15 WORKING FOR THE INDUSTRIAL HYGIENE UNIT DID YOU -- I
16 TAKE IT YOU TESTED FOR OTHER TYPES OF AIRBORNE
17 MATERIALS BESIDES ASBESTOS; CORRECT?

18 A. YES.

19 Q. WAS SILICA ONE OF THEM?

20 A. YES.

21 Q. AGAIN, DURING THE ENTIRE PERIOD YOU WERE
22 EMPLOYED BY THE INDUSTRIAL HYGIENE UNIT, CAN YOU
23 GIVE US AN APPROXIMATE PERCENTAGE OF HOW MUCH OF
24 YOUR TIME YOU SPENT WORKING ON PROBLEMS RELATED TO
25 SILICA? THAT IS, READING LITERATURE OR DOING TESTS
26 OR ANALYZING TESTS OR WRITING REPORTS AS OPPOSED TO
27 ALL THE OTHER MATERIALS? HOW MUCH OF YOUR TIME WAS
28 TAKEN UP WITH SILICA RELATED STUDY?

1 A. PROBABLY ONE-FOURTH.

2 Q. OKAY.

3 A. IT VARIED.

4 IN THE EARLY DAYS IT WAS A MUCH HIGHER
5 PERCENTAGE. IN THE EARLY DAYS, I MEAN '37, '38.
6 THEN IT DROPPED OFF AS SILICA BECAME QUITE WELL
7 CONTROLLED IN WISCONSIN AND SILICOSIS BECAME LESS OF
8 A PROBLEM.

9 AND IN THE LATE '40'S IT WAS PROBABLY ABOUT
10 -- SILICA WAS PROBABLY ABOUT 25 PERCENT OF OUR WORK,
11 MUCH MORE THAN THAT IN THE EARLY DAYS.

12 Q. I TAKE IT YOUR WORK INCLUDED THINGS
13 OTHER THAN AIRBORNE DUST CONCENTRATIONS?

14 A. YES.

15 Q. I THINK YOU MENTIONED BEFORE DUSTS AND
16 FUMES. AND CAN YOU GIVE ME THAT LIST AGAIN SO
17 I'M --

18 A. WELL --

19 Q. -- WITH YOU HERE?

20 A. THE BROAD CATEGORIES ARE DUST, FUMES,
21 VAPORS AND GASES. THAT'S ONE OF THE FEW THINGS I
22 REMEMBER.

23 DO YOU WANT DEFINITIONS OF EACH, OR DO YOU
24 WANT EXAMPLES, OR WHAT?

25 Q. WELL, JUST AN EXAMPLE OF EACH SO WE'D
26 HAVE AN IDEA OF THE VARIOUS KINDS OF THINGS YOU
27 STUDIED.

28 A. DUSTS, OF COURSE, WOULD BE THE SILICA

1 THAT YOU MENTIONED, ASBESTOS, WOOD DUST, COAL DUST,
2 NONSILICA CONTAINING ROCK DUSTS.

3 FUMES WOULD BE VAPORIZED METALS, SUCH AS LEAD
4 FROM SOLDERING, ZINC, IRON. NOW, THERE'S PARTICULAR
5 METALS, USUALLY.

6 VAPORS WOULD BE SOLVENTS, PAINT SOLVENTS,
7 VARIOUS ORGANIC SOLVENTS, SUCH AS ARE USED IN THE
8 DRY CLEANING INDUSTRY AND USED IN MANY MANUFACTURING
9 PROCESSES.

10 GASES, CARBON MONOXIDE, CHLORINE, YOU CAN NAME
11 A THOUSAND OF THEM.

12 WE MADE STUDIES OF LITERALLY A HUNDRED OR MORE
13 DIFFERENT SUBSTANCES THAT HAD POTENTIAL HAZARD
14 VALUE.

15 Q. NOW OF ALL THE WORK YOU DID WITH REGARD
16 TO ALL OF THOSE AREAS AND TYPES OF SUBSTANCES, CAN
17 YOU TELL US WHAT PERCENTAGE OF THE TIME WHILE YOU
18 WERE AT THE INDUSTRIAL HYGIENE UNIT DID YOU SPEND
19 WORKING WITH RESPECT TO ASBESTOS?

20 A. IT MUST HAVE BEEN LESS THAN ONE PERCENT.

21 Q. DURING THE TIME THAT YOU WERE WITH THE
22 INDUSTRIAL HYGIENE UNIT HOW WAS ASBESTOS VIEWED IN
23 THE INDUSTRIAL HYGIENE FIELD IN THE GRAND SCHEME OF
24 THINGS?

25 MR. BURGI: I'M GOING TO OBJECT TO THAT
26 DEFINITELY AS CALLING FOR SPECULATION.

27 MR. HARRINGTON: I'LL JOIN IN THAT
28 OBJECTION.

1 MR. RILEY: AGAIN, THAT'S LAWYER TALK.

2 MR. BURGI: YOU ARE FREE TO RESPOND. WE'RE
3 JUST LODGING AN OBJECTION.

4 MR. RILEY:

5 Q. LET ME REPHRASE THE QUESTION.

6 LET'S LIMIT IT TO HOW YOU VIEWED ASBESTOS IN
7 THE GRAND SCHEME OF THINGS DURING THE TIME PERIOD
8 THAT YOU WERE WORKING AT THE INDUSTRIAL HYGIENE
9 UNIT.

10 A. WE KNEW OF ASBESTOS AS A POTENTIAL
11 HAZARD. WE KNEW THAT IT COULD CAUSE ASBESTOSIS, A
12 LUNG DISEASE, BUT WE NEVER HAD A RECORDED CASE OF
13 ASBESTOSIS IN WISCONSIN AS FAR AS I KNOW. AND WE
14 HAD MANY -- WE GOT MUCH OF OUR INFORMATION FROM THE
15 INDUSTRIAL COMMISSION STATISTICS, AND I DON'T RECALL
16 EVER SEEING ANYTHING ON A CASE OF ASBESTOSIS.

17 WE KNEW ABOUT ASBESTOS FROM THE LITERATURE,
18 FROM OUR PROFESSIONAL MEETINGS, DISCUSSIONS OF
19 ASBESTOS, JUST AS THERE WERE DISCUSSIONS ON MANY,
20 MANY OTHER SUBSTANCES. BUT WE DIDN'T CONSIDER IT A
21 SERIOUS HAZARD IN THE INDUSTRIES THAT WE KNEW OF IN
22 WISCONSIN.

23 Q. NOW, WAS YOUR VIEW OF ASBESTOS IN ANY
24 WAY RELATED TO THE M.A.C.?

25 YOU TALKED ABOUT KNOWING THAT IT WAS A
26 POTENTIAL HAZARD. WAS THE POTENTIAL FOR CAUSING
27 ADVERSE HEALTH EFFECTS RELATED TO THE AMOUNT OF
28 EXPOSURE, BASED ON YOUR UNDERSTANDING?

1 A. IF I UNDERSTAND YOUR QUESTION CORRECTLY,
2 THE DEGREE OF HAZARD IS BASED ON THE DEGREE OF
3 EXPOSURE.

4 Q. OKAY. THAT'S WHAT -- YEAH. THAT'S
5 RIGHT.

6 AND I'M TRYING TO FIGURE OUT WHEN YOU SAY
7 ASBESTOS WAS A POTENTIAL HAZARD BASED ON YOUR
8 UNDERSTANDING, WAS IT A POTENTIAL HAZARD IN TERMS OF
9 ANY LEVEL OF EXPOSURE OR AT GREAT LEVELS OF
10 EXPOSURE?

11 MR. BURGI: I'M GOING TO OBJECT TO THE
12 QUESTION AS VAGUE AND AMBIGUOUS.

13 THE WITNESS: IT WAS A POTENTIAL HAZARD ONLY
14 WHEN THE EXPOSURE WAS SUFFICIENTLY HIGH TO BE
15 SERIOUS.

16 MR. RILEY:

17 Q. OKAY. WAS THERE A MAXIMUM ALLOWABLE
18 CONCENTRATION FOR ASBESTOS DURING THE TIME PERIOD
19 THAT YOU WERE WORKING --

20 A. YES.

21 Q. -- AT THE STATE BOARD OF HEALTH?

22 YOU'VE GOT TO WAIT UNTIL I FINISH THE
23 QUESTION.

24 A. OH.

25 Q. MY QUESTION IS, WAS THERE A MAXIMUM
26 ALLOWABLE CONCENTRATION FOR ASBESTOS DURING THE
27 PERIOD THAT YOU WERE WORKING FOR THE STATE BOARD OF
28 HEALTH?

1 A. YES.

2 Q. AND WAS THAT THE MEASURING STICK THAT
3 YOU USED TO DETERMINE WHETHER OR NOT THERE WAS AN
4 ACTUAL POTENTIAL HAZARD IN A GIVEN WORK PLACE?

5 A. YES.

6 Q. OKAY. AND WHEN DETERMINING WHETHER OR
7 NOT THERE WAS ANY HAZARD IN THE WORK PLACE FROM
8 ASBESTOS, WAS THE MAXIMUM ALLOWABLE CONCENTRATION
9 THE TOOL YOU USED TO MAKE THAT DETERMINATION?

10 A. YES, BUT WITH QUALIFICATIONS.

11 - THERE ARE OTHER THINGS INVOLVED IN MAKING THE
12 DETERMINATION BESIDES JUST THE RELATIONSHIP WITH THE
13 DUST COUNT. ONE ALSO LOOKS INTO THE QUALITY OF THE
14 CONTROL TECHNIQUES USED, PERIOD.

15 MAY I EXPAND ON THAT?

16 Q. SURE.

17 A. THE EVALUATION OF THE CONCENTRATION OF
18 POTENTIALLY HAZARDOUS MATERIAL IN THE AIR AND
19 BREATHED BY THE WORKERS IS ONE PART OF THE OVERALL
20 EVALUATION TO DETERMINE WHETHER A HAZARD TRULY
21 EXISTS.

22 IN ADDITION, AS I SAID, WE EVALUATE THE
23 CONTROL TECHNIQUES. WE DETERMINE THE -- WE CHECK
24 THE STATISTICS TO SEE IF THERE HAS BEEN ANY
25 INDICATION OF HARM CAUSED BY THE MATERIAL IN THE
26 MEDICAL RECORDS SO TO SPEAK, OR MEDICAL STATISTICS,
27 TO DETERMINE WHETHER THERE'S BEEN ANY SYMPTOM OR
28 SIGN OF DAMAGE DONE BY THIS PARTICULAR MATERIAL.

1 IN OTHER WORDS, YOU EVALUATE EVERYTHING THAT
2 MIGHT CONTRIBUTE TO THE HEALTH OF THE WORKER OR
3 MIGHT -- YEAH. THE DUST COUNT IS PART OF THE
4 OVERALL STUDY, OVERALL EVALUATION.

5 Q. DID THE INDUSTRIAL HYGIENE UNIT MAINTAIN
6 A LIBRARY OF WRITTEN INFORMATION, PERIODICALS ON THE
7 SUBJECT OF INDUSTRIAL HYGIENE?

8 A. YES.

9 Q. DID THAT LIBRARY INCLUDE UNITED STATES
10 PUBLIC HEALTH SERVICE PUBLICATIONS?

11 A. YES.

12 Q. DID YOU VIEW THOSE AS AUTHORITATIVE
13 SOURCES OF INFORMATION IN THE INDUSTRIAL HYGIENE
14 FIELD?

15 A. YES.

16 Q. DID THE LIBRARY INCLUDE THE JOURNAL OF
17 INDUSTRIAL HYGIENE AND TOXICOLOGY?

18 A. IT DID.

19 Q. DID YOU CONSIDER THAT JOURNAL TO BE
20 AUTHORITATIVE IN THE FIELD OF INDUSTRIAL HYGIENE?

21 A. YES.

22 MR. RILEY: I'D LIKE THE COURT REPORTER TO
23 MARK AS FLUCK EXHIBIT 1 FOR IDENTIFICATION A
24 MULTI-PAGE DOCUMENT WHICH PURPORTS TO BE A COPY OF
25 AN ARTICLE ENTITLED "THE STUDY OF ASBESTOSIS IN THE
26 ASBESTOS TEXTILE INDUSTRY," PUBLISHED BY THE --
27 ACTUALLY, IT COMPRISES PUBLIC HEALTH BULLETIN NUMBER
28 241, DATED AUGUST 1938.

1 THERE ARE SEVERAL AUTHORS, THE FIRST OF WHICH
2 IS WALDEMAR C. DREESEN.

3 Q. MR. FLUCK, WOULD YOU TAKE A LOOK AT WHAT
4 HAS BEEN MARKED AS EXHIBIT 1 AND TELL ME WHETHER YOU
5 CAN JUST IDENTIFY THE DOCUMENT.

6 A. YES.

7 Q. WAS THAT AN ARTICLE WHICH WAS IN THE
8 INDUSTRIAL HYGIENE UNIT'S LIBRARY OF MATERIALS
9 DURING THE TIME THAT YOU WERE THERE?

10 A. IT WAS.

11 Q. OKAY. IS THAT SOMETHING THAT YOU READ
12 IN THE ORDINARY COURSE OF YOUR WORK?

13 A. YES.

14 Q. WAS THAT INFORMATION THAT YOU USED IN
15 CARRYING OUT YOUR DUTIES FOR THE INDUSTRIAL HYGIENE
16 UNIT?

17 A. I'M SURE WE CONSIDERED IT.

18 Q. SURE.

19 I'D LIKE THE COURT REPORTER TO MARK AS FLUCK
20 EXHIBIT 2 FOR IDENTIFICATION AN ARTICLE ENTITLED,
21 "THE HEALTH SURVEY OF PIPE COVERING OPERATIONS IN
22 CONSTRUCTING NAVAL VESSELS." THE FIRST PAGE OF THE
23 DOCUMENT IS APPARENTLY THE COVER OF THE JOURNAL OF
24 INDUSTRIAL HYGIENE AND TOXICOLOGY FOR JANUARY 1946.

25 MR. FLUCK, WOULD YOU TAKE A LOOK AT EXHIBIT 2,
26 AND TELL ME IF THAT'S AN ARTICLE WHICH WAS IN THE
27 LIBRARY OF THE INDUSTRIAL HYGIENE UNIT DURING THE
28 TIME THAT YOU WORKED THERE?

1 A. YES.

2 Q. IS THAT AN ARTICLE WHICH YOU REVIEWED IN
3 THE COURSE OF YOUR DUTIES AT THE INDUSTRIAL HYGIENE
4 UNIT?

5 A. I DID.

6 Q. DID YOU CONSIDER IT AUTHORITATIVE?

7 A. IT ADDED TO OUR KNOWLEDGE OF ASBESTOS.

8 Q. OKAY.

9 A. I DON'T -- I WOULD CONSIDER IT
10 AUTHORITATIVE, BECAUSE THIS GENTLEMAN PHILLIP
11 DRINKER WAS A VERY HIGHLY RESPECTED INDUSTRIAL
12 HYGIENIST.

13 Q. OKAY. THANK YOU.

14 NOW YOU MENTIONED EARLIER, MR. FLUCK, THAT YOU
15 DID SOME WORK AT WHAT WE'RE CALLING THE ALGOMA
16 PLANT.

17 JUST SO THE RECORD IS CLEAR, MR. BURGI, WE
18 DON'T HAVE ANY PROBLEM WITH THE STIPULATION THAT IF
19 WE REFER TO THE ALGOMA PLANT THAT THAT'S THE PLACE
20 OF EMPLOYMENT OF THE PLAINTIFF IN CONNECTION WITH
21 THE BRANDT CASE.

22 MR. BURGI: I HAVE NO PROBLEM WITH THAT.

23 MR. RILEY: THANK YOU VERY MUCH.

24 Q. HOW DID IT COME ABOUT THAT YOU DID WORK
25 AT THE ALGOMA PLANT?

26 A. I DON'T REMEMBER.

27 Q. OKAY. DID YOU HAVE SOME PERSONAL
28 CONNECTION WITH THE TOWN OF ALGOMA?

1 A. YES.

2 Q. OKAY. WHY DON'T YOU TELL US WHAT THAT
3 WAS?

4 A. WELL, I SPENT MY CHILDHOOD IN ALGOMA.
5 MY FATHER WAS A PHARMACIST THERE, HAD HIS OWN
6 DRUGSTORE FOR 40 SOME YEARS.

7 Q. WOULD IT HELP REFRESH YOUR RECOLLECTION
8 ABOUT YOUR WORK AT THE ALGOMA PLANT IF I SHOWED YOU
9 SOME DOCUMENTS THAT WERE APPARENTLY GENERATED BY THE
10 WISCONSIN STATE BOARD OF HEALTH IN CONNECTION WITH
11 THAT WORK?

12 A. YES.

13 Q. OKAY.

14 A. IT'S BEEN A LONG TIME SINCE --

15 Q. ALL RIGHT. LET'S SEE WHAT WE CAN DO.

16 I TAKE IT YOU HAVE COPIES OF THESE MATERIALS?

17 MR. BURGI: YES, I DO.

18 MR. RILEY: OKAY. HOW ABOUT YOU? DO YOU
19 HAVE COPIES?

20 MR. HARRINGTON: YES.

21 MR. RILEY: OKAY.

22 Q. LET ME SHOW YOU WHAT HAS ALREADY BEEN
23 MARKED IN ANOTHER DEPOSITION AS DETJIN EXHIBIT 1 FOR
24 IDENTIFICATION.

25 AND LET ME STATE FOR THE RECORD THAT THE FIRST
26 PAGE IS A MARCH 3, 1948 LETTER, FROM WILLIAM Z.
27 FLUCK TO MR. G.R. MERCER, FACTORY SUPERINTENDENT,
28 ALGOMA PLYWOOD AND VENEER, ALGOMA, WISCONSIN.

1 ATTACHED TO THAT DOCUMENT IS A THREE-PAGE REPORT
2 BEARING THE DATE FEBRUARY 13, 1948.

3 MR. FLUCK, DOES YOUR SIGNATURE APPEAR ON THE
4 FIRST PAGE OF DETJIN EXHIBIT 1?

5 A. YES.

6 Q. DOES IT ALSO APPEAR ON THE LAST PAGE OF
7 DETJIN EXHIBIT 1?

8 A. YES.

9 Q. OKAY. ARE THOSE LAST THREE PAGES A TRUE
10 AND CORRECT COPY OF A REPORT THAT YOU DID IN
11 CONNECTION WITH A DUST STUDY AT THE ALGOMA PLANT IN
12 FEBRUARY OF 1948?

13 A. YES.

14 Q. AND IS THE FIRST PAGE A TRUE AND CORRECT
15 COPY OF A LETTER THAT YOU WROTE TO MR. MERCER AT THE
16 ALGOMA PLANT IN MARCH OF 1948?

17 A. THAT'S RIGHT.

18 Q. OKAY. LET'S TAKE A LOOK AT THE STUDY
19 ITSELF WHICH BEGINS ON THE SECOND PAGE OF THIS
20 EXHIBIT.

21 WHAT WAS THE PURPOSE OF THE STUDY THAT YOU DID
22 AT THE ALGOMA PLANT IN FEBRUARY OF 1948?

23 A. I'LL READ IT FROM HERE.

24 "TO DETERMINE ATMOSPHERIC CONCENTRATIONS OF
25 ASBESTOS DUST AT OPERATIONS WHERE 'KALO'
26 WAS BEING PROCESSED."

27 Q. THAT APPEARS IN QUOTES IN THE REPORT; IS
28 THAT CORRECT?

1 A. YES.

2 Q. OKAY.

3 MR. BURGI: I'M SORRY. WAS THAT YES? WAS
4 THAT YES, HIS QUESTION "THAT APPEARS IN QUOTES IN
5 THE DOCUMENT," WAS THE RESPONSE "YES"?

6 THE WITNESS: OH, YES.

7 MR. BURGI: FOR THE RECORD.

8 MR. RILEY:

9 Q. ALL RIGHT. YOUR REPORT GOES ON TO SAY
10 THAT "AIR SAMPLES WERE COLLECTED BY AN M.S.A.

11 MIDGET IMPINGER APPARATUS, AND DUST COUNTS
12 WERE MADE BY AN APPROVED LIGHT FIELD
13 TECHNIQUE."

14 WAS THE M.S.A. MIDGET IMPINGER APPARATUS
15 STANDARD IN THE INDUSTRIAL HYGIENE FIELD AT THAT
16 TIME?

17 A. IT WAS.

18 Q. OKAY. AND THE MAKING OF COUNTS BY AN
19 APPROVED LIGHT FIELD TECHNIQUE, WAS THAT ALSO A
20 STANDARD TECHNIQUE --

21 A. THAT WAS STANDARD TECHNIQUE.

22 Q. -- ONE OF THE TECHNIQUES THAT WAS
23 DISCUSSED BY THE U.S. PUBLIC HEALTH SERVICE --

24 A. THAT'S RIGHT.

25 Q. -- AT THAT TIME?

26 DID THE U.S. PUBLIC HEALTH SERVICE FROM TIME
27 TO TIME PROVIDE TECHNICAL ASSISTANCE TO THE
28 WISCONSIN INDUSTRIAL HYGIENE UNIT?

1 A. YES.

2 Q. THE LAST SENTENCE OF THE FIRST PAGE OF
3 THIS REPORT SAYS, "THE RESULTS OF THE DUST COUNTS
4 ARE LISTED ON THE FOLLOWING TABLE:"

5 IF YOU TURN TO THE SECOND PAGE, DO WE THEN SEE
6 THE RESULTS OF YOUR DUST COUNTS AT THE ALGOMA PLANT?

7 A. THAT'S RIGHT.

8 Q. OKAY. NOW, YOU USE THE ABBREVIATION
9 "M P C F" ABOVE THOSE, THE NUMBERS ON THAT TABLE.

10 CAN YOU TELL US WHAT M P C F REFERS TO?

11 A. MILLIONS OF DUST PARTICLES PER CUBIC
12 FOOT OF AIR.

13 Q. THAT'S WHAT THAT NOTES DOWN THERE RIGHT
14 UNDERNEATH THOSE COUNTS; IS THAT CORRECT?

15 A. CORRECT.

16 Q. AND THEN YOU GO ON TO WRITE "MAXIMUM
17 ALLOWABLE CONCENTRATION, (M.A.C.) FOR ASBESTOS DUST
18 EQUALS 5.0 M P C F."

19 WHAT WERE YOU REFERRING TO THERE? IS THAT THE
20 MAXIMUM ALLOWABLE CONCENTRATION FOR ASBESTOS DUST AT
21 THE TIME?

22 A. THAT WAS THE STANDARD AT THE TIME, YES.

23 Q. OKAY.

24 WHAT YOU'VE DESCRIBED, IS THAT THE RECOGNIZED
25 SAFE LEVEL OF EXPOSURE STANDARD BY THE A.C.G.I.H.?

26 MR. BURGI: IF YOU RECALL.

27 THE WITNESS: IT WAS THE RECOGNIZED LEVEL,
28 BUT WHETHER THAT COMMITTEE ON M.A.C.'S WAS IN

1 EXISTENCE IN FEBRUARY OF '48, I DON'T KNOW.

2 Q. OKAY.

3 A. I'M REASONABLY SURE IT WAS.

4 IF THAT COMMITTEE THAT ACTUALLY PUBLISHED
5 RESULTS WASN'T IN EXISTENCE, THEN IT WAS THESE
6 STANDARDS THAT WE GOT FROM THE U.S. PUBLIC HEALTH
7 SERVICE.

8 Q. OKAY. SO IT MAY HAVE BEEN FROM SOME
9 OTHER SOURCE?

10 A. IT MAY HAVE BEEN FROM SOME OTHER SOURCE.

11 Q. BUT WHATEVER THE SOURCE, THIS WAS THE
12 RECOGNIZED SAFE LEVEL?

13 A. IT WAS THE RECOGNIZED LEVEL, YES.

14 Q. OKAY.

15 A. THE RECOGNIZED SAFE LEVEL.

16 Q. AND WAS THIS MAXIMUM ALLOWABLE
17 CONCENTRATION FOR ASBESTOS DUST, DID THAT HAVE BUILT
18 INTO IT THE TIME WEIGHTED AVERAGE THAT YOU'VE
19 DISCUSSED BEFORE?

20 A. YES.

21 Q. YOU ALSO LISTED A MAXIMUM ALLOWABLE
22 CONCENTRATION FOR WOOD DUST HERE.

23 WAS WOOD DUST SOMETHING THAT WAS ALSO IN THE
24 AIR?

25 A. YES.

26 Q. OKAY. YOU HAVE A SUMMARY HERE, AND
27 UNDER THE HEADING "SUMMARY," IT SAYS, "NUMBER 1, ALL
28 ATMOSPHERIC CONCENTRATIONS OF ASBESTOS WERE WELL

1 BELOW THE MAXIMUM ALLOWABLE CONCENTRATION OF 5.0
2 MILLION PARTICLES PER CUBIC FOOT OF AIR."

3 NOW, WHAT DID THAT FINDING INDICATE TO YOU AS
4 AN INDUSTRIAL HYGIENIST?

5 A. WELL, IT INDICATED THAT THEY HAD QUITE
6 GOOD CONTROL PROCEDURES, AND IT INDICATED THAT THERE
7 WAS -- THAT IT WAS VERY LIKELY A SAFE WORKING
8 ATMOSPHERE.

9 Q. NOW IF YOU'LL TURN TO THE THIRD PAGE OF
10 THE REPORT, YOU HAVE "RECOMMENDATIONS." IT SAYS,
11 "NUMBER 1, IT IS RECOMMENDED THAT ANOTHER ASBESTOS
12 DUST STUDY BE MADE AT A TIME WHEN ASBESTOS DUST
13 PRODUCING PROCESSES ARE IN FULL OPERATION."

14 WHAT WAS THE PURPOSE OF THAT RECOMMENDATION?

15 A. IT WAS VERY PROBABLY THAT SOME MACHINE
16 OR OTHER, SOME DUST PRODUCING MACHINE, WAS NOT IN
17 OPERATION THE DAY I TOOK THE SAMPLES. THAT'S THE
18 ONLY THING I CAN THINK OF.

19 Q. ALL RIGHT.

20 A. IT'S A LONG TIME AGO TO TRY TO REMEMBER.

21 MR. BURGI: IS THAT YOUR RECOLLECTION OR IS
22 THAT SPECULATION?

23 THE WITNESS: THAT'S THE ONLY REASON I WOULD
24 HAVE MADE SUCH A RECOMMENDATION.

25 MR. RILEY: JUST SO WE'RE CLEAR, MR. BURGI,
26 FROM NOW ON IF YOU HAVE ANY QUESTIONS, I WOULD
27 PREFER THAT YOU SAVE THEM UP AND HANDLE THEM ON
28 CROSS-EXAMINATION INSTEAD OF INTERRUPTING MY

1 EXAMINATION, AND I'LL BE HAPPY TO RETURN THE
2 COURTESY. OKAY?

3 MR. BURGI: VERY WELL.

4 MR. RILEY: THANK YOU.

5 Q. LET ME BACK UP FOR ONE SECOND. WAS IT
6 THE ORDINARY PRACTICE FOLLOWED AT THE INDUSTRIAL
7 HYGIENE UNIT WHILE YOU WERE THERE TO DO A WRITTEN
8 REPORT WHEN YOU WENT OUT AND DID A STUDY SUCH AS
9 THIS ONE?

10 A. YES.

11 Q. OKAY. NOW LET'S LOOK AT THE FIRST PAGE
12 OF DETJIN EXHIBIT 1, THIS MARCH 3, 1948, LETTER TO
13 MR. MERCER.

14 WHAT WAS YOUR PURPOSE IN WRITING THE LETTER TO
15 MR. MERCER?

16 A. WELL, THAT WAS SIMPLY A METHOD OF
17 FORWARDING THE REPORT TO WHOEVER HAD BEEN DESIGNATED
18 TO ME AS THE RESPONSIBLE OFFICIAL.

19 Q. OKAY.

20 A. I SEE HERE HE WAS THE FACTORY
21 SUPERINTENDENT. THAT WOULD HAVE BEEN VERY MUCH IN
22 ORDER, FOR US TO SUBMIT THE REPORT TO ABOUT THE TOP
23 LEVEL MAN WE FOUND AT THE PLANT.

24 Q. OKAY. AND WAS THAT THE ORDINARY
25 PRACTICE FOLLOWED AT THE INDUSTRIAL HYGIENE UNIT?
26 TO SEND COPIES OF THE REPORT TO THE TOP RESPONSIBLE
27 PERSON AT THE PLANT?

28 A. YES.

1 Q. OKAY. YOU INDICATED IN YOUR LETTER, DID
2 YOU NOT, THAT "WE WERE PLEASED TO FIND THAT ALL
3 ASBESTOS DUST CONCENTRATIONS WERE WELL BELOW THE
4 MAXIMUM ALLOWABLE CONCENTRATION"?

5 A. RIGHT.

6 Q. OKAY. AND WHY DID THAT PLEASE YOU,
7 MR. FLUCK?

8 I THINK I KNOW, BUT WHY DON'T YOU TELL US.

9 A. THAT'S LIKE SAYING "YOURS VERY TRULY,"
10 OR "SINCERELY YOURS." IT WAS RATHER A STOCK PHRASE,
11 I GUESS.

12 Q. OKAY. I TAKE IT YOU WEREN'T PLEASED TO
13 FIND THE DUST, BUT YOU WERE ACTUALLY PLEASED TO FIND
14 THE DUST CONCENTRATIONS BELOW THE MAXIMUM ALLOWABLE
15 CONCENTRATION; TRUE?

16 A. YES.

17 Q. BECAUSE OF WHAT THAT INDICATED ABOUT THE
18 CONDITIONS IN THE WORKING PLACE?

19 A. YES.

20 Q. IT WAS OF COURSE YOUR CONCERN AT THE
21 INDUSTRIAL HYGIENE UNIT TO HAVE A SAFE WORKING
22 ENVIRONMENT IN THE STATE OF WISCONSIN; IS THAT TRUE?

23 A. THAT WAS OUR JOB TO TRY TO PROMOTE A
24 SAFE WORKING ENVIRONMENT.

25 Q. THAT'S WHAT YOU FOUND AT ALGOMA PLYWOOD
26 WHEN YOU WENT ON THE STUDY?

27 A. YES.

28 MR. BURGI: OBJECT TO THE QUESTION.

1 MR. HARRINGTON: OBJECT TO THE FORM OF THAT
2 QUESTION AS BEING VAGUE AS TO TIME AND PLACE; AND
3 ALSO THE FORM. LEADING AND SUGGESTIVE.

4 MR. BURGI: I ALSO FEEL THAT IT SETS UP AND
5 MISLEADS THE TESTIMONY AND MISSTATES PRIOR
6 TESTIMONY, AND I JOIN IN THE OBJECTION OF THE OTHER
7 COUNSEL HERE.

8 MR. RILEY:

9 Q. JUST SO WE'RE CLEAR, YOU UNDERSTOOD I
10 WAS REFERRING TO YOUR FEBRUARY 1948 REPORT WITH MY
11 QUESTION. CORRECT?

12 A. I WAS READING MARCH -- WAIT. YEAH. THE
13 ONE I HAVE HERE, THE LETTER, IS MARCH 3RD.

14 Q. THAT'S RIGHT. AND THE REPORT IS
15 FEBRUARY 13, 1948?

16 A. FEBRUARY 13. CORRECT.

17 Q. YOU UNDERSTOOD I WAS REFERRING WITH MY
18 QUESTION TO THE 1948 REPORT?

19 A. YES.

20 Q. OKAY. JUST SO THERE ISN'T ANY QUESTION
21 ABOUT THESE ATTORNEYS' OBJECTIONS TO THE FORM OF MY
22 QUESTION, I'LL REPHRASE MY QUESTION.

23 WITH RESPECT TO SAFETY IN THE WORK PLACE WHAT
24 DID YOU FIND WHEN YOU WENT OUT TO THE ALGOMA PLANT
25 IN FEBRUARY OF 1948 AND MEASURED ASBESTOS DUST IN
26 THE AIR?

27 A. WELL, TO PUT IT BLUNTLY, IT LOOKED
28 PRETTY GOOD. I MEAN, IT WAS A GOOD, CLEAN LOOKING

1 PLANT, AND THE RESULTS OF THE TEST WE MADE INDICATED
2 THAT IT WAS A SAFE ENVIRONMENT.

3 Q. THANK YOU.

4 MR. FLUCK, I WOULD LIKE YOU TO LOOK AT A
5 DOCUMENT WHICH HAS BEEN PREVIOUSLY MARKED AS DETJIN
6 EXHIBIT SIX FOR IDENTIFICATION, PLEASE.

7 FOR THE RECORD, THAT'S A COPY OF A JUNE 21,
8 1948 LETTER, FROM MRS. GERTRUDE C. BRICE, PLANT
9 NURSE, TO DR. PAUL A. BREHM, SUPERVISOR, INDUSTRIAL
10 HYGIENE UNIT, WISCONSIN STATE BOARD OF HEALTH.

11 NOW MR. FLUCK, THIS LETTER STATES:

12 "DEAR MR. BREHM: MR. FLUCK MADE DUST
13 STUDIES OF OUR KALO OPERATIONS IN MARCH OF
14 THIS YEAR AND AT THAT TIME RECOMMENDED THAT
15 ANOTHER ASBESTOS DUST STUDY BE MADE WHEN THE
16 DUST PRODUCING PROCESSES WOULD BE IN FULL
17 OPERATION. THEY ARE NOW IN FULL OPERATION.
18 WILL YOU KINDLY MAKE ARRANGEMENTS FOR A
19 REPEAT DUST STUDY? YOUR ATTENTION IS
20 APPRECIATED."

21 NOW, DOES THAT DOCUMENT REFRESH YOUR
22 RECOLLECTION THAT IN APPROXIMATELY JUNE OF 1948
23 SOMEONE AT THE ALGOMA PLANT REQUESTED A REPEAT STUDY
24 TO FOLLOW UP ON THE STUDY YOU DID IN FEBRUARY?

25 A. YES.

26 Q. OKAY. NOW, DOES THIS LETTER HELP
27 REFRESH YOUR RECOLLECTION ABOUT HOW IT WAS THAT YOU
28 CAME TO DO A STUDY AT ALL AT ALGOMA?

1 AND I'M REFERRING NOW TO YOUR DESCRIPTION
2 EARLIER OF IT EITHER BEING SOMETHING PROMPTED BY THE
3 INDUSTRIAL HYGIENE UNIT OR PROMPTED BY A REQUEST
4 FROM INDUSTRY.

5 DOES IT HELP YOU IN ANY WAY?

6 A. I CAN'T BE CERTAIN, BUT IT WOULD SEEM
7 THAT THE REQUEST HAD COME FROM THE INDUSTRY, AND
8 VERY PROBABLY FROM THE PLANT NURSE.

9 Q. OKAY.

10 A. BUT I DON'T REMEMBER SPECIFICALLY.

11 Q. ALL RIGHT. FAIR ENOUGH.

12 WOULD YOU PLEASE LOOK AT DETJIN EXHIBIT SEVEN
13 FOR IDENTIFICATION. THAT'S A COPY OF A JUNE 30,
14 1948 LETTER, FROM MRS. GERTRUDE C. BRICE TO DOCTOR
15 PAUL A. BREHM. THAT LETTER STATES:

16 "WE HAVE NOT HEARD FROM YOU IN RESPONSE TO
17 OUR LETTER OF JUNE 21, REQUESTING A REPEAT
18 DUST STUDY OF OUR KALO OPERATIONS. SINCE
19 THE FACTORY WILL BE CLOSED JULY 3 TO
20 JULY 19 FOR MASS VACATIONS, IT WILL BE OF
21 NO USE TO COME DURING THAT TIME. WILL YOU
22 KINDLY ARRANGE FOR THE DUST STUDY FOR ANY
23 TIME AFTER JULY 19?"

24 DOES THAT REFRESH YOUR RECOLLECTION IN TERMS
25 OF FOLLOW-UP THAT WAS DONE BY THE ALGOMA PLANT
26 CONCERNING YOUR WORK THERE?

27 A. IT SAYS THEY WANTED ANOTHER STUDY. I
28 DON'T REMEMBER THAT SPECIFIC LETTER.

1 Q. GENERALLY, WHEN YOU WERE DOING YOUR WORK
2 AT THE ALGOMA PLANT, WERE THOSE INDIVIDUALS -- DID
3 THEY INDICATE TO YOU THAT THEY WANTED YOU TO DO THIS
4 DUST WORK OR WAS THIS SOMETHING THAT YOU WERE DOING
5 THAT THEY DIDN'T WANT IT TO HAPPEN? I MEAN --

6 A. THEY WANTED ME TO DO IT.

7 MR. BURGI: OBJECT TO THE QUESTION ON THE
8 GROUNDS IT CALLS FOR SPECULATION.

9 MR. RILEY:

10 Q. GO AHEAD.

11 I WANT TO KNOW WHAT ATTITUDE YOU PERCEIVED ON
12 THE PART OF THE ALGOMA PEOPLE WITH RESPECT TO YOUR
13 WORK THERE.

14 A. THEY WELCOMED OUR PRESENCE.

15 Q. MR. FLUCK, I'D LIKE YOU TO LOOK AT WHAT
16 HAS BEEN MARKED AS DETJIN EXHIBIT EIGHT FOR
17 IDENTIFICATION, THE FIRST PAGE OF WHICH IS A COPY OF
18 AN AUGUST 18, 1948 LETTER, FROM PAUL A. BREHM TO
19 MR. G.R. MERCER AT THE ALGOMA PLANT. ATTACHED TO
20 THAT IS A TWO-PAGE REPORT OF A FOLLOW-UP DUST STUDY
21 DATED JULY 29, 1948.

22 I WOULD LIKE YOU TO FIRST LOOK AT THE JULY 29,
23 1948 REPORT THAT'S ATTACHED TO THE LETTER.

24 WOULD YOU READ THE FIRST PARAGRAPH OF THAT
25 REPORT, PLEASE?

26 A. "THIS STUDY WAS MADE AS A FOLLOW-UP OF A
27 PREVIOUS STUDY (FEBRUARY 13, 1948) OF
28 ASBESTOS DUST CONCENTRATIONS IN THE

6 Q. ALL RIGHT. AND DOES THAT ACCURATELY
7 STATE THE PURPOSE OF YOUR FOLLOW-UP DUST STUDY?

8 A. THAT'S RIGHT.

9 Q. AND YOUR SIGNATURE APPEARS ON THE SECOND
10 PAGE OF THE REPORT?

11 A. YES.

12 Q. SO THIS IS A TRUE AND CORRECT COPY OF
13 THE REPORT THAT YOU DID?

14 A. YES.

15 Q. ALL RIGHT.

16 YOU MAKE REFERENCE ONCE AGAIN TO THE MIDGET
17 IMPINGER AND APPROVED LIGHT FIELD TECHNIQUES AS THE
18 PROCESS YOU USED IN DOING THE FOLLOW-UP STUDY?

19 A. YES.

20 Q. AGAIN, THOSE WERE STILL STANDARD IN THE
21 INDUSTRY?

22 A. YES.

23 Q. ALL RIGHT. WOULD YOU PLEASE LOOK AT THE
24 DUST COUNTS THAT ARE RECORDED IN YOUR REPORT?

25 WERE YOU AGAIN RECORDING THOSE COUNTS IN
26 MILLIONS OF DUST PARTICLES PER CUBIC FOOT OF AIR?

27 A. THAT'S CORRECT.

28 Q. DID YOU COMPARE THOSE DUST COUNTS TO THE

1 MAXIMUM ALLOWABLE CONCENTRATION FOR ASBESTOS DUST?

2 A. YES.

3 Q. AND THAT'S WHAT YOU INDICATED THERE AS A
4 5.0 MILLION PARTICLES PER CUBIC FOOT OF AIR FOR
5 ASBESTOS DUST?

6 A. YES.

7 Q. AND WHAT DID YOU FIND AS THE RESULT OF
8 YOUR STUDY THAT YOU DID AT THE ALGOMA PLANT IN JULY
9 OF 1948?

10 A. IT'S MENTIONED IN THE SUMMARY THERE.
11 "ALL ATMOSPHERIC CONCENTRATIONS WERE BELOW THE
12 MAXIMUM ALLOWABLE CONCENTRATION OF 5.0 MILLION
13 PARTICLES."

14 Q. AND WHAT DID THAT INDICATE TO YOU WITH
15 RESPECT TO SAFETY AT THE PLANT?

16 A. IT WAS VERY GOOD, SAFE.

17 Q. WOULD YOU LOOK AT THE FIRST PAGE OF
18 EXHIBIT EIGHT, PLEASE?

19 NOW, THAT IS A LETTER FROM DOCTOR BREHM TO
20 MR. MERCER AT THE ALGOMA PLANT; CORRECT?

21 A. YES.

22 Q. NOW THE LETTER DOESN'T SHOW YOU AS
23 HAVING RECEIVED A COPY OF THAT. IN THE ORDINARY
24 COURSE OF THE WORK OF THE INDUSTRIAL HYGIENE UNIT
25 WHEN YOU WERE THERE WHEN A REPORT SUCH AS THIS THAT
26 YOU DID WAS SENT OUT TO THE PLANT, WOULD YOU HAVE
27 RECEIVED A COPY OF THE LETTER OR SEEN THE
28 CORRESPONDENCE AT SOME POINT IN TIME?

1 A. I WOULD HAVE SEEN IT, YES.

2 Q. ALL RIGHT. DR. BREHM WROTE IN THE FIRST
3 PARAGRAPH: "ENCLOSED IS A COPY OF THE MOST RECENT
4 DUST STUDY CONDUCTED IN YOUR PLANT IN
5 REGARD TO THE ASBESTOS DUST EXPOSURE.
6 YOU WILL NOTE THAT CONDITIONS WERE VERY
7 SATISFACTORY AT THE TIME OF THIS VISIT."

8 DID YOU AGREE WITH THAT STATEMENT?

9 A. YES.

10 Q. OKAY. DO YOU KNOW, MR. FLUCK, WHETHER
11 OR NOT THE FOLKS AT THE ALGOMA PLANT SENT YOUR
12 REPORTS ON TO ANYONE ELSE IN THEIR CORPORATE
13 ORGANIZATION?

14 A. THE PLANT NURSE TOLD ME WHAT SHE WAS
15 GOING TO DO WITH THEM. SHE TOLD ME THAT SHE WAS
16 GOING TO FORWARD THEM TO MANAGEMENT, VARIOUS
17 MANAGEMENT LEVELS.

18 Q. MR. FLUCK, WOULD YOU LOOK AT WHAT HAS
19 PREVIOUSLY BEEN MARKED AS DETJIN EXHIBIT ELEVEN FOR
20 IDENTIFICATION, PLEASE?

21 FOR THE RECORD, THAT'S A COPY OF AN
22 OCTOBER 28, 1948 LETTER, FROM MRS. GERTRUDE C. BRICE
23 TO DR. PAUL A. BREHM.

24 NOW, THERE'S A REFERENCE IN THIS LETTER TO A
25 VISIT WHICH YOU HAD MADE TO THE PLANT AND A REQUEST
26 FOR FURTHER WORK ON BEHALF OF THE INDUSTRIAL HYGIENE
27 DIVISION.

28 GIVEN THE FACT THAT THIS LETTER RELATES TO

1 YOUR WORK, IN THE ORDINARY COURSE OF THINGS AT THE
2 STATE BOARD OF HEALTH WOULD DR. BREHM HAVE SHOWN YOU
3 THIS CORRESPONDENCE AND DISCUSSED IT WITH YOU?

4 A. YES.

5 Q. OKAY. AND DID THIS REQUEST FROM THE
6 ALGOMA PLANT ULTIMATELY PROMPT YOU TO GO BACK TO THE
7 ALGOMA PLANT?

8 A. YES.

9 Q. WOULD YOU LOOK, PLEASE, AT WHAT HAS
10 PREVIOUSLY BEEN MARKED AS DETJIN EXHIBIT FOURTEEN
11 FOR IDENTIFICATION, PLEASE.

12 IS EXHIBIT FOURTEEN A TRUE AND CORRECT COPY OF
13 A REPORT THAT YOU WROTE IN CONNECTION WITH A DUST
14 STUDY YOU DID AT THE ALGOMA PLANT IN NOVEMBER OF
15 1948?

16 A. YES.

17 Q. IS THAT YOUR SIGNATURE WHICH APPEARS ON
18 THE SECOND PAGE OF THE REPORT?

19 A. YES.

20 Q. OKAY. AT THE FIRST PAGE OF THE REPORT
21 YOU SAY "THE PURPOSE OF THIS STUDY WAS TO DETERMINE
22 ATMOSPHERIC CONCENTRATIONS OF DUST IN THE VICINITY
23 OF THE K-LO BAGGING OPERATIONS AND DURING THE
24 UNLOADING OF K-LO FROM FREIGHT CARS."

25 IS THAT AN ACCURATE STATEMENT OF THE PURPOSE
26 OF YOUR STUDY?

27 A. YES.

28 Q. YOU MAKE REFERENCE THEN TO THE BAGGING

1 OPERATIONS AT THE PLANT AND LOCAL EXHAUST
2 VENTILATION; CORRECT?

3 A. YES.

4 Q. THERE WAS LOCAL EXHAUST VENTILATION AT
5 THE LOCATIONS YOU STUDIED IN 1948 THAT WAS ALREADY
6 IN PLACE; IS THAT RIGHT?

7 A. THAT'S RIGHT.

8 Q. WAS THERE ALSO LOCAL EXHAUST VENTILATION
9 IN OTHER PLACES IN THE PLANT?

10 A. YES.

11 Q. CAN YOU DESCRIBE FOR US THE TYPES OF
12 VENTILATION EQUIPMENT THAT THEY HAD IN PLACE?

13 A. THERE WERE EXHAUST HOODS AT THE VARIOUS
14 SAWS AND SANDING OPERATIONS ^{AND} ~~AT~~ THE BAGGING
15 OPERATION.

16 Q. OKAY. NOW YOU INDICATE ON THE FIRST
17 PAGE OF THIS REPORT, "VISUAL INSPECTION SHOWED A
18 CONSIDERABLE AMOUNT OF THE DUST GENERATED DURING
19 BAGGING OPERATIONS WAS NOT BEING CAUGHT BY THE
20 HOOD."

21 WAS THAT AN OBSERVATION YOU ACTUALLY MADE WHEN
22 YOU WERE OUT THERE?

23 A. RIGHT. RIGHT.

24 Q. ALL RIGHT. DID YOU CONCLUDE THAT THE
25 INEFFICIENCY OF THAT EXHAUST FAN HAD SOME IMPACT ON
26 THE DUST COUNTS?

27 A. YES.

28 Q. OKAY. ON THE SECOND PAGE OF THE REPORT

1 YOU'VE ONCE AGAIN INDICATED DUST COUNTS WITH
2 REFERENCE TO MILLIONS OF PARTICLES PER CUBIC FOOT OF
3 AIR; CORRECT?

4 A. THAT'S RIGHT.

5 Q. AND UNDER "CONCLUSIONS," YOU WROTE:
6 "ALTHOUGH THE DUST CONCENTRATION OF 24 TO
7 40 MILLION MIGHT NOT CAUSE AN ACUTE HEALTH
8 HAZARD, BECAUSE WORKERS ARE EXPOSED FOR
9 ONLY ABOUT ONE AND ONE HALF HOURS PER DAY
10 AND BECAUSE THE ASBESTOS DUST IS DILUTED
11 WITH CALCIUM SILICATE AND WOOD, SUCH
12 CONCENTRATIONS ARE, NEVERTHELESS, A
13 BORDERLINE SITUATION FROM THE ASBESTOSIS
14 STANDPOINT AND CAN CAUSE RESPIRATORY
15 IRRITATIONS."

16 I'M GOING TO BREAK THAT DOWN AND ASK YOU SOME
17 SPECIFICS QUESTIONS ABOUT VARIOUS PORTIONS OF THAT
18 STATEMENT.

19 YOU SAY THAT THE ASBESTOS DUST IS DILUTED WITH
20 CALCIUM SILICATE; CORRECT?

21 A. YES.

22 Q. YOU WERE MEASURING THEN IN THESE DUST
23 COUNTS MORE THAN JUST THE ASBESTOS IN THE AIR?

24 A. THAT'S CORRECT. THE TOTAL DUST.

25 Q. THIS IS TOTAL DUST THAT YOU ARE
26 REPORTING HERE; CORRECT?

27 A. YES.

28 Q. AND THAT'S TRUE WITH THE PRIOR REPORTS

1 WE'VE ALREADY LOOKED AT?

2 A. CORRECT.

3 Q. WAS IT YOUR UNDERSTANDING THAT ONLY A
4 PORTION OF THAT DUST WAS ASBESTOS?

5 A. YES.

6 Q. AND YOU MAKE REFERENCE TO THE EXOSURE OF
7 WORKERS TO THESE LOCATIONS AS BEING ABOUT ONE AND
8 ONE HALF HOURS PER DAY; CORRECT?

9 A. YES.

10 Q. DOES THAT HAVE SOMETHING TO DO WITH THE
11 TIME WEIGHTED AVERAGE CONCEPT WE TALKED ABOUT
12 BEFORE?

13 A. IT DOES.

14 Q. WOULD YOU EXPLAIN THAT TO ME?

15 A. A PERSON CAN BE EXPOSED TO LEVELS ABOVE
16 THE STANDARD, THE M.A.C., FOR SHORT PERIODS OF TIME,
17 IF HE'S NOT EXPOSED EIGHT HOURS A DAY, EVERY DAY OF
18 HIS WORKING DAY.

19 HERE, IT WAS AN HOUR AND A HALF, IT SAYS; AND
20 IF I REMEMBER IT FROM A PREVIOUS LETTER, THIS
21 UNLOADING OPERATION IS A -- IS NOT A CONTINUOUS
22 THING. IT HAPPENS ONLY A CERTAIN NUMBER OF DAYS OUT
23 OF THE MONTH, OR WHATEVER THE PHRASE WAS. IT'S NOT
24 A CONTINUOUS OPERATION, AND THE WORKER WASN'T
25 EXPOSED EIGHT HOURS A DAY.

26 Q. OKAY. NOW YOU WROTE NEXT, "THE DOUBLE
27 HOOD NOW BEING USED IS NOT UTILIZING AVAILABLE POWER
28 TO GET THE MAXIMUM BENEFIT."

1 IS THAT A CONCLUSION THAT YOU DREW BASED ON
2 YOUR VISUAL OBSERVATIONS AS WELL AS THE DUST COUNTS?

3 A. YES. AND MY KNOWLEDGE OF VENTILATION,
4 INDUSTRIAL VENTILATION SYSTEMS. IT WASN'T AN
5 OPTIMUM DESIGN.

6 Q. ALL RIGHT. TAKING EVERYTHING INTO
7 CONSIDERATION THEN, DID YOU CONCLUDE CONCENTRATIONS
8 OF KALO DUST AT THE CAR UNLOADING OPERATIONS WERE
9 NOT HIGH ENOUGH TO CONSTITUTE A HEALTH HAZARD UNDER
10 PRESENT CONDITIONS OF EXPOSURE OF ABOUT FOUR OR FIVE
11 DAYS PER MONTH?

12 A. YES.

13 MR. HARRINGTON: I OBJECT TO THE FORM OF
14 THAT QUESTION.

15 MR. BURGI: JOIN IN THAT OBJECTION.

16 MR. RILEY:

17 Q. LET'S TAKE IT ONE STEP AT A TIME.
18 I READ YOUR CONCLUSION THERE; CORRECT?

19 A. THAT'S RIGHT.

20 Q. AND WAS THAT CONCLUSION BASED UPON THE
21 ONE AND ONE HALF HOUR PER DAY EXPOSURE AND THE
22 DILUTED NATURE OF THE ASBESTOS IN THE TOTAL DUST
23 SAMPLE?

24 A. THAT'S RIGHT.

25 MR. HARRINGTON: OBJECT TO THE FORM OF THE
26 QUESTION.

27 MR. BURGI: JOIN IN THE OBJECTION.

28 / / /

1 MR. RILEY:

2 Q. MR. FLUCK, JUST TO MAKE SURE OUR RECORD
3 ISN'T CLUTTERED: WHEN YOU CONCLUDED "CONCENTRATION
4 OF KALO DUST AT THE CAR UNLOADING OPERATIONS WERE
5 NOT HIGH ENOUGH TO CONSTITUTE A HEALTH HAZARD UNDER
6 PRESENT CONDITIONS OF EXPOSURE OF ABOUT FOUR OR FIVE
7 DAYS PER MONTH," WHAT DID YOU TAKE INTO ACCOUNT IN
8 REACHING THAT CONCLUSION?

9 MR. HARRINGTON: I OBJECT TO THE FORM OF THE
10 QUESTION.

11 - YOU CAN ANSWER, SIR. THESE ARE JUST LEGAL
12 OBJECTIONS.

13 MR. RILEY: WHAT'S THE BASIS FOR THAT
14 OBJECTION?

15 MR. HARRINGTON: I THINK THE FORM IS LEADING
16 AND SUGGESTIVE.

17 MR. RILEY: I'LL LIVE WITH THAT ONE.

18 MR. BURGI: I'LL JOIN.

19 MR. RILEY: WHY NOT?

20 MR. HARRINGTON: AND I ALSO THINK THAT IT
21 LACKS FOUNDATION.

22 BUT GO AHEAD, YOU CAN ANSWER THE QUESTION,
23 SIR. I'M NOT TRYING TO THROW YOU.

24 THE WITNESS: WOULD YOU READ THE QUESTION,
25 AGAIN?

26 (RECORD READ.)

27 / / /

28 / / /

1 MR. RILEY:

2 Q. AND BEFORE YOU SAY THAT, THAT WAS YOUR
3 CONCLUSION; CORRECT?

4 A. YES.

5 Q. OKAY. WHAT DID YOU TAKE INTO ACCOUNT IN
6 REACHING THAT?

7 MR. HARRINGTON: THAT WAS THE BASIS OF MY
8 OBJECTION, THAT YOU INCLUDED THE CONCLUSION IN YOUR
9 PRIOR QUESTION BEFORE IT CAME FROM THE WITNESS; AND
10 NOW I'M OBJECTING TO IT, YOUR LAST QUESTION, BECAUSE
11 IT WAS LEADING AND SUGGESTIVE.

12 MR. RILEY: WHICH LAST QUESTION?

13 MR. HARRINGTON: "THIS WAS YOUR CONCLUSION;
14 CORRECT?"

15 MR. RILEY: ALL RIGHT. WE'RE GOING TO
16 SATISFY MR. HARRINGTON IF IT TAKES US ALL MORNING.

17 Q. YOU WROTE, "CONCENTRATIONS OF KALO DUST
18 AT THE CAR UNLOADING OPERATIONS WERE NOT HIGH ENOUGH
19 TO CONSTITUTE A HEALTH HAZARD UNDER PRESENT
20 CONDITIONS OF EXPOSURE OF ABOUT FOUR OR FIVE DAYS
21 PER MONTH."

22 WAS THAT YOUR CONCLUSION, SIR?

23 A. YES.

24 MR. HARRINGTON: ALL RIGHT. I OBJECT TO THE
25 FORM OF THAT QUESTION, AGAIN, BASED ON THE FORM AND
26 ON LACK OF FOUNDATION IN TERMS OF QUALIFYING THE
27 WITNESS MEDICALLY.

28 / / /

1 MR. RILEY:

2 Q. NOW, WHAT DID YOU TAKE INTO ACCOUNT IN
3 REACHING THAT CONCLUSION, SIR?

4 A. TO PUT IT BLUNTLY, MY PROFESSIONAL
5 JUDGMENT.

6 I'M GETTING TIRED OF THESE QUESTIONS. EXCUSE
7 ME.

8 Q. MY QUESTIONS? LET'S --

9 A. I'LL ELABORATE. WE TOOK INTO ACCOUNT MY
10 FINDINGS ON THE DUST COUNTS, MY KNOWLEDGE OF WHAT
11 THOSE FINDINGS MEANT, THE TIME THAT THE WORKER WAS
12 EXPOSED.

13 Q. OKAY. NOW WITH SPECIFIC REFERENCE TO
14 YOUR REPORT WHERE YOU SAID THE ASBESTOS DUST IS
15 DILUTED WITH CALCIUM SILICATE, IS THAT SOMETHING
16 THAT YOU TOOK INTO ACCOUNT AS WELL?

17 A. YES.

18 Q. ALL RIGHT. NOW YOU HAVE A
19 "RECOMMENDATIONS SECTION" UNDERNEATH HERE, THE
20 "CONCLUSION SECTION," AND IT STATES, "IT IS
21 RECOMMENDED THAT THE PRESENT BAGGING EXHAUST HOODS
22 BE MODIFIED BY REMOVING THE PERFORATED INNER WALL."

23 WAS THAT YOUR RECOMMENDATION, SIR?

24 A. YES.

25 Q. OKAY. THANKS.

26 MR. FLUCK, WOULD YOU PLEASE LOOK AT WHAT HAS
27 PREVIOUSLY BEEN MARKED AS DETJIN EXHIBIT FIFTEEN FOR
28 IDENTIFICATION, PLEASE.

1 FOR THE RECORD, THAT IS A REPORT, A COPY OF A
2 REPORT BEARING THE DATE DECEMBER 1, 1948, IT REFERS
3 TO THE ALGOMA PLANT, AND IT APPEARS TO HAVE BEEN
4 WRITTEN BY WILLIAM Z. FLUCK.

5 NOW, IS THAT YOUR REPORT, SIR?

6 A. YES.

7 Q. THAT'S YOUR SIGNATURE, ISN'T IT,
8 MR. FLUCK?

9 A. YES.

10 Q. OKAY. COULD YOU TELL US, PLEASE, WHAT
11 THE PURPOSE OF DOING THIS STUDY WAS?

12 A. TO DETERMINE THE EFFECTIVENESS OF THE
13 LOCAL EXHAUST SYSTEM AT THE K-LO BAGGING OPERATION.

14 Q. WAS THIS A FOLLOW-UP TO THE DUST STUDY
15 THAT YOU JUST LOOKED AT WHICH WAS MARKED AS EXHIBIT
16 FOURTEEN?

17 A. YES.

18 Q. DOES THIS REPORT FOCUS IN ON THAT
19 VENTILLATION EQUIPMENT THAT WAS REFERRED TO IN
20 EXHIBIT FOURTEEN?

21 A. YES.

22 Q. ON PAGE 2 OF THE REPORT YOU INDICATE THE
23 DUST COUNTS THAT YOU FOUND; CORRECT?

24 A. YES.

25 Q. OKAY. AND THE CONCLUSION SECTION YOU
26 WROTE: "DUST COUNTS TAKEN AT THE BREATHING ZONE OF
27 THE BAGGING OPERATOR AND VISUAL
28 OBSERVATION OF FLOW OF DUSTY AIR INTO THE

1 EXHAUST HOODS INDICATE THAT THE HOODS ARE
2 PERFORMING A VERY SATISFACTORY JOB OF
3 CONTROLLING DUST GENERATED BY THE BAGGING
4 OPERATION."

5 WAS THAT YOUR CONCLUSION, SIR?

6 A. IT WAS.

7 Q. YOU THEN WROTE, "IT WAS OBSERVED THAT
8 SHAKING OF DUSTY BAGS AND CLEANING OF
9 WORKERS' CLOTHING BY BLOWING OFF WITH
10 COMPRESSED AIR GENERATED LARGE CLOUDS OF
11 DUST. THE DUST COUNT OF 20 MILLION OF
12 SAMPLE NUMBER THREE SHOWS THAT SUCH
13 PRACTICES CAN VERY RAPIDLY INCREASE THE
14 DUSTINESS OF THE ROOM."

15 IS THAT ALSO AN OBSERVATION THAT YOU MADE?

16 A. THAT'S RIGHT.

17 Q. WERE YOU DIRECTING THE OBSERVATION AT
18 THE WORK PRACTICE THERE OF USING COMPRESSED AIR?

19 A. YES.

20 Q. IF YOU WOULD JUST FOR REFERENCE LOOK AT
21 EXHIBIT FOURTEEN AND EXHIBIT FIFTEEN, AND LOOK AT
22 THE DUST COUNTS.

23 THE QUESTION IS, WERE THE DUST COUNTS IN YOUR
24 DECEMBER 1948 STUDY HIGHER OR LOWER THAN THE DUST
25 COUNTS IN YOUR NOVEMBER 1948 STUDY?

26 MR. BURGI: I'M GOING TO OBJECT TO THE
27 QUESTION ON THE GROUNDS IT'S VAGUE AND AMBIGUOUS
28 WITH RESPECT TO SPECIFIC LOCATIONS.

1 THE WITNESS: THE DECEMBER IS ALSO LOWER
2 THAN THE NOVEMBER.

3 MR. RILEY:

4 Q. AND WHAT DID THAT INDICATE TO YOU, SIR?

5 A. IT INDICATED AN IMPROVEMENT IN THE
6 VENTILATION SYSTEM.

7 Q. OKAY. NOW IN THE NOVEMBER REPORT WITH
8 REFERENCE TO THOSE HIGHER DUST COUNTS, YOU
9 CONCLUDED, QUOTE, "CONCENTRATIONS OF K-LO DUST AT
10 THE CAR UNLOADING OPERATIONS WERE NOT HIGH
11 ENOUGH TO CONSTITUTE A HEALTH HAZARD UNDER
12 PRESENT CONDITIONS OF EXPOSURE OF ABOUT
13 FOUR OR FIVE DAYS PER MONTH."

14 WITH RESPECT TO THE LOWER COUNTS YOU'VE
15 IDENTIFIED IN THE DECEMBER 1948 REPORT, WHAT WAS
16 YOUR CONCLUSION WITH REGARD TO WHETHER OR NOT THE
17 CONCENTRATIONS WERE HIGH ENOUGH TO CONSTITUTE A
18 HEALTH HAZARD?

19 MR. HARRINGTON: JUST TO BE CONSISTENT, I
20 SHOULD INTERPOSE ANOTHER OBJECTION HERE.

21 GO AHEAD, SIR.

22 MR. RILEY: TO THE FORM OF THE QUESTION?

23 MR. HARRINGTON: ON THE GROUNDS I PREVIOUSLY
24 STATED.

25 MR. RILEY: WAIT A MINUTE. YOU DIDN'T
26 PREVIOUSLY STATE AN OBJECTION TO THE QUESTION WITH
27 RESPECT TO THIS DECEMBER 1948 STUDY. I WANT YOU TO
28 GO AHEAD AND STATE YOUR OBJECTION.

1 MR. HARRINGTON: I'M OBJECTING TO THE FORM
2 OF THE QUESTION. THAT'S ALL I HAVE TO SAY.

3 MR. RILEY: NO. THE RULES PROVIDE THAT IF
4 YOU HAVE AN OBJECTION TO THE FORM OF THE QUESTION,
5 THE REASON YOU MAKE IT NOW IS SO THAT IT CAN BE
6 CURED SEASONABLY, WITHOUT RETURNING TO CALIFORNIA.

7 NOW, I DON'T THINK IT'S SATISFACTORY SIMPLY
8 TO SAY THAT YOU OBJECT TO THE FORM OF THE QUESTION.
9 I'D LIKE TO KNOW SPECIFICALLY WHAT YOU THINK IS
10 WRONG WITH THAT QUESTION.

11 MR. HARRINGTON: CAN I HEAR THE QUESTION
12 AGAIN?

13 MR. RILEY: I THINK THAT INDICATES HOW
14 SERIOUSLY YOU ARE, HOW SERIOUS YOU ARE IN MAKING
15 THAT OBJECTION.

16 PLEASE READ IT.

17 (RECORD READ.)

18

19 MR. RILEY: NOW, DO YOU HAVE SOMETHING TO
20 SAY, MR. HARRINGTON, ABOUT THAT QUESTION?

21 MR. HARRINGTON: YES. I'M OBJECTING TO THE
22 FORM OF THE QUESTION BECAUSE I THINK IT'S VAGUE AND
23 AMBIGUOUS AS TO WHAT YOU ARE REFERRING TO
24 SPECIFICALLY, AND WITHOUT FOUNDATION AS TO LEVELS
25 ABOVE THE MAXIMUM ALLOWABLE CONCENTRATION WHICH MAY
26 BE RECORDED IN THE DOCUMENT THAT YOU ARE REFERRING
27 TO.

28 MR. BURGI: I ALSO THINK THERE'S A LACK OF

1 FOUNDATION ON THE ISSUE OF WHAT CONSTITUTES A HEALTH
2 HAZARD.

3 MR. RILEY: WELL, I THINK THIS MAN HAS
4 TESTIFIED IN SOME DETAIL ON THAT SUBJECT, SO I'M
5 SATISFIED WITH THE QUESTION.

6 Q. DO YOU HAVE THE QUESTION IN MIND?
7 WE'LL READ IT AGAIN SO WE GET ALL THAT LAWYER TALK
8 OUT OF THE WAY. DO YOU WANT IT READ, MR. FLUCK?

9 A. I THINK I KNOW THE QUESTION.

10 10 IF MY ANSWER ISN'T CORRECT --

11 11 MR. HARRINGTON: MR. FLUCK, THESE OBJECTIONS
12 12 DO NOT IN ANY WAY GO TO YOUR ANSWERS, SIR.

13 13 THESE OBJECTIONS ARE DIRECTED TO THE LEGAL
14 14 FORM OF THE QUESTION. THEY AREN'T INTENDED TO
15 15 REFLECT ON YOU IN ANY WAY WHATSOEVER, SIR. I HOPE
16 16 YOU UNDERSTAND THAT.

17 17 THE WITNESS: MAY I GIVE AN ANSWER AND SEE
18 18 IF IT'S APPROPRIATE?

19 19 MR. RILEY:

20 20 Q. PLEASE ANSWER.

21 21 A. MY ANSWER IS THAT THE RESULTS OF THE
22 22 DECEMBER 1ST, 1948 SURVEY, INDICATE A LACK OF A
23 23 HEALTH HAZARD.

24 24 Q. OKAY.

25 25 A. DUST CONCENTRATIONS WERE NOT HIGH ENOUGH
26 26 TO CONSTITUTE A HEALTH HAZARD.

27 27 Q. THANK YOU.

28 28 NOW YOU DID MAKE RECOMMENDATIONS IN YOUR

1 DECEMBER 1, 1948 REPORT; CORRECT?

2 A. YES. WE MADE RECOMMENDATIONS WHEREVER
3 WE SAW A WAY OF IMPROVING A SITUATION, AND I SAW A
4 WAY OF IMPROVING THE VENTILATION SYSTEM.

5 THAT RECOMMENDATION REALLY HAD NOTHING TO DO
6 WITH THE HEALTH HAZARD. THAT WAS AN IMPROVEMENT OF
7 THE VENTILATION SYSTEM.

8 Q. OKAY. AND IN YOUR DECEMBER REPORT YOU
9 HAVE TWO RECOMMENDATIONS WRITTEN DOWN THERE:
10 "NUMBER ONE, IT IS RECOMMENDED THAT SHAKING AND
11 INSPECTING OF EMPTY BAGS BE DONE DIRECTLY IN FRONT
12 OF DUST COLLECTOR HOOD; NUMBER TWO, THE USE OF A
13 COMPRESSED AIR HOSE IN THE BAGGING ROOM SHOULD BE
14 PROHIBITED IF POSSIBLE."

15 THOSE ARE YOUR RECOMMENDATIONS, SIR?

16 A. YES.

17 Q. OKAY. AND WHY DID YOU MAKE THOSE
18 RECOMMENDATIONS?

19 A. THOSE ARE MADE TO IMPROVE THE SITUATION.

20 Q. OKAY. WAS IT YOUR INTENT TO REFLECT IN
21 MAKING THOSE RECOMMENDATIONS THAT YOU THOUGHT THAT
22 THERE WAS A HAZARD?

23 A. NO.

24 Q. THANK YOU.

25 A. THAT WAS JUST IMPROVING THE PROCEDURE.

26 Q. OKAY.

27 MR. FLUCK, I'D LIKE YOU, PLEASE, TO LOOK AT
28 WHAT HAS PREVIOUSLY BEEN MARKED AS DETJIN EXHIBIT

1 SIXTEEN FOR IDENTIFICATION. IT'S A ONE-PAGE
2 DOCUMENT. IT PURPORTS TO BE A COPY OF A
3 FEBRUARY 23, 1948 LETTER, FROM D.H. BYERS,
4 SCIENTIST, LABORATORY SECTION, DIVISION OF
5 INDUSTRIAL HYGIENE OF THE U.S. PUBLIC HEALTH
6 SERVICE, TO MR. WILLIAM Z. FLUCK.

7 IS THAT A TRUE AND CORRECT COPY OF A LETTER
8 WHICH YOU RECEIVED ON OR ABOUT FEBRUARY 23RD,
9 1949 --

10 A. YES.

11 Q. -- FROM MR. BYERS?

12 A. YES.

13 Q. ALL RIGHT.

14 NOW YOU MENTIONED EARLIER THAT YOU WERE --
15 THAT YOU WERE MEASURING THE TOTAL DUST IN THE AIR AT
16 THE ALGOMA PLANT. CORRECT?

17 A. THAT'S RIGHT.

18 Q. AND YOU ALSO MENTIONED EARLIER THAT THE
19 DUST YOU WERE MEASURING WAS NOT PURE ASBESTOS IT
20 ALSO HAD, I THINK YOU USED THE WORD "DILUTED WITH
21 CALCIUM SILICATE." IS THAT CORRECT?

22 A. THAT'S RIGHT.

23 Q. NOW THE MAXIMUM ALLOWABLE CONCENTRATION
24 FOR ASBESTOS -- WAS IT YOUR UNDERSTANDING THAT THAT
25 WAS THE MAXIMUM ALLOWABLE CONCENTRATION FOR ANY DUST
26 THAT CONTAINED ANY PORTION OF ASBESTOS OR FOR PURE
27 ASBESTOS DUST?

28 A. THE MAXIMUM ALLOWABLE CONCENTRATION IS

1 FOR THE ASBESTOS PORTION OR FOR PURE ASBESTOS, IF
 2 YOU WANT TO CALL IT THAT.

3 Q. ALL RIGHT.

4 I WILL REPRESENT TO YOU -- WELL, LET'S LOOK AT
 5 EXHIBIT SIXTEEN. IT SAYS, "DEAR MR. FLUCK: THE
 6 SAMPLE OF SETTLED DUST WHICH YOU SUBMITTED
 7 WITH YOUR LETTER OF JANUARY 18, 1949, HAS
 8 BEEN ANALYZED WITH THE FOLLOWING RESULTS:"

9 I WILL REPRESENT TO YOU THAT THE PEOPLE WHO
 10 PRODUCED EXHIBIT SIXTEEN HAVE NOT PRODUCED A
 11 JANUARY 18, 1949 LETTER FROM YOU, THAT'S REFERRED TO
 12 IN THIS DOCUMENT. I WOULD OF COURSE SHOW IT TO YOU
 13 IF I HAD IT, BUT I DON'T.

14 BUT I'D LIKE YOU TO REVIEW THAT AND SEE IF
 15 THIS LETTER REFRESHES YOUR RECOLLECTION THAT YOU IN
 16 FACT CONTACTED THE U.S. PUBLIC HEALTH SERVICE WITH
 17 RESPECT TO THE DUST YOU COLLECTED AT THE ALGOMA
 18 PLANT?

19 A. YES. WE SUBMITTED A SAMPLE FOR
 20 ANALYSIS.

21 Q. OKAY. NOW, WHY DID YOU SUBMIT A SAMPLE
 22 OF THE DUST FROM THE ALGOMA PLANT TO THE U.S. PUBLIC
 23 HEALTH SERVICE FOR ANALYSIS?

24 A. BECAUSE ALTHOUGH WE KNEW THAT THE DUST
 25 WAS NOT 100 PERCENT ASBESTOS, WE WANTED TO FIND OUT
 26 APPROXIMATELY WHAT PERCENTAGE WAS; AND WE ALSO WERE
 27 INTERESTED IN SILICA FROM THE SILICOSIS STANDPOINT.
 28 THIS WAS SIMPLY TO IMPROVE THE QUALITY OF OUR STUDY.

1 Q. OKAY. WERE YOU FAMILIAR WITH MR. BYERS
2 AT THE TIME?

3 A. YES.

4 Q. OKAY. DID YOU CONSIDER HIM TO BE A
5 COMPETENT MEMBER OF THE U.S. PUBLIC HEALTH SERVICE?

6 A. YES. INDEED. ONE OF THE TOP MEN IN THE
7 COUNTRY IN HIS PROFESSION.

8 Q. OKAY. NOW, WHAT DID YOU LEARN FROM
9 MR. BYERS ABOUT THE COMPOSITION OF THE DUST FROM THE
10 ALGOMA PLANT?

11 A. WELL, IT SAYS HERE IN HIS REPORT
12 "13 PERCENT FREE SILICA, AND THE ASBESTOS CONTENT IS
13 MORE THAN 5 PERCENT AND PROBABLY LESS THAN 12."

14 Q. NOW, HOW DID YOU USE THAT INFORMATION IN
15 DOING YOUR WORK AT THE ALGOMA PLANT?

16 A. THAT GAVE, THAT PERMITTED US A MORE
17 EXACT -- TO COME UP WITH A MORE EXACT, MORE
18 MEANINGFUL, M.A.C. THAN THE FIVE PARTS PER MILLION
19 FOR PURE ASBESTOS. WE COULD COME UP WITH A MORE
20 LOGICAL OR REASONABLE OR SCIENTIFICALLY ACCURATE
21 M.A.C. FOR THE ALGOMA DUST.

22 Q. SO YOU WERE GOING TO USE THAT
23 INFORMATION TO COME UP WITH A MAXIMUM ALLOWABLE
24 CONCENTRATION FOR THE DUST YOU FOUND AT ALGOMA?

25 A. YES.

26 Q. OKAY. WOULD YOU LOOK AT DETJIN EXHIBIT
27 SEVENTEEN FOR IDENTIFICATION, PLEASE.

28 FOR THE RECORD, THAT'S A COPY OF A JULY 20,

1 1949 LETTER FROM MRS. GERTRUDE C. BRICE TO DR. ALLAN
 2 FILEK, DIRECTOR, INDUSTRIAL HYGIENE UNIT, STATE
 3 BOARD OF HEALTH.

4 MR. FLUCK, WHO WAS DR. FILEK IN 1949?

5 A. HE WAS ONE OF THE WISCONSIN DEPARTMENT
 6 OF HEALTH DOCTORS. I DON'T KNOW HIS EXACT TITLE.

7 BUT HE, UPON THE DEATH OF DR. PAUL BREHM, THE
 8 DIRECTOR OF THE INDUSTRIAL HYGIENE UNIT, DR. FILEK
 9 FOR A SHORT TIME NOMINALLY WAS THE HEAD OF THE UNIT.

10 NOW, CORRESPONDENCE TO THE INDUSTRIAL HYGIENE
 11 UNIT WENT THROUGH THIS DR. FILEK WHO WAS NOT AN
 12 INDUSTRIAL HYGIENIST. HE WAS THE MEDICAL FIGUREHEAD
 13 THROUGH WHOM CORRESPONDENCE WENT.

14 Q. OKAY. THIS LETTER INDICATES THAT THE
 15 PLANT NURSE AT THE ALGOMA PLANT WAS REQUESTING A
 16 COUNT MADE OF ASBESTOS DUST CONCENTRATIONS, AND
 17 THERE'S A REFERENCE TO A PRIOR SURVEY DONE BY YOU.
 18 CORRECT?

19 A. YES.

20 Q. ALL RIGHT. DID YOU GO BACK TO THE
 21 ALGOMA PLANT AS A RESULT OF THIS REQUEST AND DO
 22 ANOTHER STUDY?

23 A. I'M NOT SURE. VERY LIKELY I WOULD HAVE
 24 BEEN THE ONE TO GO, BUT I'D HAVE TO --

25 Q. LET'S REFRESH YOUR RECOLLECTION.

26 A. I'D LIKE YOU TO --

27 A. I WAS THERE AT THE TIME. I VERY
 28 PROBABLY DID.

1 Q. LET'S LOOK AT DETJIN EXHIBIT EIGHTEEN
 2 FOR IDENTIFICATION. IT'S A TWO-PAGE DOCUMENT, THE
 3 FIRST PAGE OF WHICH IS A COPY OF AN AUGUST 10, 1949
 4 LETTER FROM WILLIAM Z. FLUCK TO MR. G.R. MERCER;
 5 THE SECOND PAGE IS A DUST SURVEY BEARING THE DATE
 6 AUGUST 2ND, 1949.

7 LET'S LOOK AT THE DUST SURVEY BEARING THE DATE
 8 AUGUST 2ND, 1949.

9 IS THAT A TRUE AND CORRECT COPY OF A REPORT
 10 THAT YOU DRAFTED, SIR?

11 A. I CAN'T READ MY SIGNATURE ON THIS COPY,
 12 BUT --

13 Q. I DON'T SEE A SIGNATURE THERE.

14 A. EVERYTHING ELSE LOOKS AUTHENTIC.

15 MY INITIALS ARE ON IT, THE INITIALS OF THE
 16 SECRETARY -- IT'S THE TYPE OF THING I WOULD HAVE
 17 WRITTEN, AND I WROTE THE COVER LETTER, SO OBVIOUSLY
 18 -- SO EVEN WITHOUT THE SIGNATURE I WOULD SAY THAT
 19 YES, THAT'S A COPY OF MY REPORT.

20 Q. OKAY. ONCE AGAIN, YOU WERE STUDYING
 21 AIRBORNE CONCENTRATIONS OF DUST AT THE ALGOMA PLANT
 22 IN THIS REPORT. IS THAT TRUE?

23 A. YES.

24 Q. DID YOU REPORT YOUR FINDINGS IN TERMS OF
 25 DUST COUNTS?

26 A. YES.

27 Q. THOSE APPEAR ON THE FACE OF THE REPORT
 28 THEMSELVES; CORRECT?

1 A. THAT'S RIGHT.

2 Q. ALL RIGHT. ONCE AGAIN, YOU INDICATE
3 "MAXIMUM ALLOWABLE CONCENTRATION FOR ASBESTOS DUST
4 EQUALS 5.0 M P C F, MILLION PARTICLES PER CUBIC
5 FOOT"?

6 A. YES.

7 Q. IS THAT THE PURE ASBESTOS DUST STANDARD
8 YOU REFERRED TO EARLIER?

9 A. THAT'S RIGHT.

10 Q. WHAT WAS YOUR SUMMARY CONCLUSION WITH
11 RESPECT TO THE SURVEY THAT YOU DID?

12 A. ALL ATMOSPHERIC CONCENTRATIONS WERE WELL
13 BELOW THE M.A.C. FOR ASBESTOS DUST OF 5.0 MILLION
14 PARTICLES.

15 Q. NOW IN YOUR -- THE AUGUST 10 LETTER,
16 THAT'S YOUR SIGNATURE CORRECT, SIR?

17 A. YES.

18 Q. AND IS YOUR LETTER A TRUE AND CORRECT
19 COPY OF THE SAME?

20 A. YES.

21 Q. YOU WERE WRITING TO MR. MERCER AT THE
22 ALGOMA PLANT; CORRECT?

23 A. YES.

24 Q. YOU ENCLOSE WITH YOUR LETTER THREE
25 COPIES OF YOUR AUGUST 2ND, 1949 REPORT. IS THAT
26 TRUE?

27 Q. YOU WROTE, "WE WERE PLEASED TO FIND ALL
28 OF THE COUNTS TO BE VERY LOW, INDICATING EXCELLENT

1 DESIGN AND MAINTENANCE OF YOUR DUST EXHAUST SYSTEM."
2 THAT WAS YOUR CONCLUSION; CORRECT?

3 A. YES.

4 Q. ONCE AGAIN, YOU WERE PLEASED ABOUT THAT
5 FROM THE INDUSTRIAL HYGIENE STANDPOINT?

6 A. YES.

7 Q. THEN YOU WROTE, "IT IS DIFFICULT TO SET
8 AN ACCURATE M.A.C. (MAXIMUM ALLOWABLE
9 CONCENTRATION) FOR THE DUST LIBERATED INTO
10 THE AIR AT YOUR VARIOUS K-LO PROCESSING
11 MACHINES. AN ANALYSIS OF DUST FROM THE
12 DUST COLLECTOR WAS ANALYZED BY THE
13 LABORATORY OF THE U.S. PUBLIC HEALTH
14 SERVICE AND WAS FOUND TO CONTAIN
15 13 PERCENT FREE SILICA AND 5 TO 12 PERCENT
16 ASBESTOS. AS BOTH OF THESE MATERIALS HAVE
17 ABOUT THE SAME DEGREE OF TOXICITY AN
18 M.A.C. OF 20 MILLION WOULD BE PERMISSIBLE,
19 ASSUMING THE DUST BREATHED BY THE MEN TO
20 BE THE SAME AS THAT CAUGHT IN THE DUST
21 COLLECTOR."

22 NOW, IS YOUR REFERENCE TO THE U.S. PUBLIC
23 HEALTH SERVICE A REFERENCE TO MR. BYERS' ANALYSIS
24 THAT WE'VE JUST TALKED ABOUT?

25 A. YES.

26 Q. OKAY. NOW, CAN YOU EXPLAIN -- WELL, WE
27 BETTER BACK UP FOR MR. HARRINGTON'S SAKE HERE.

28 MR. HARRINGTON: YOU DON'T HAVE TO DO

1 ANYTHING FOR MY SAKE, COUNSEL.

2 MR. RILEY: WE'LL SAVE SOME TIME.

3 MR. HARRINGTON: I HAVE AN OBLIGATION TO
4 MAKE SURE THE QUESTIONS ARE LEGAL. JUST SO THAT
5 THE WITNESS UNDERSTANDS THAT, AND YOU CAN GO AHEAD
6 AND ASK HIM ANY WAY YOU WANT.

7 MR. RILEY:

8 Q. WHERE YOU WRITE, "AS BOTH OF THESE
9 MATERIALS HAVE ABOUT THE SAME DEGREE OF
10 TOXICITY, AN M.A.C. OF 20 MILLION WOULD BE
11 PERMISSIBLE, ASSUMING THE DUST BREATHED BY
12 THE MEN TO BE THE SAME AS THAT CAUGHT IN
13 THE DUST COLLECTOR."

14 THAT WAS YOUR CONCLUSION. CORRECT, SIR?

15 A. YES.

16 Q. OKAY. NOW, HOW DID YOU COME ABOUT THIS
17 CONCLUSION THAT THE M.A.C. OF 20 MILLION PARTICLES
18 WAS APPROPRIATE FOR THIS DUST FROM THE ALGOMA PLANT?

19 A. THAT WAS BASED ON THE ANALYSIS OF THE
20 DUST THAT WE -- THE ANALYSIS WE GOT FROM THE PUBLIC
21 HEALTH SERVICE, WHICH MENTIONS 13 PERCENT FREE
22 SILICA AND SOMEWHERE BETWEEN 5 AND 12 PERCENT
23 ASBESTOS.

24 IF YOU TAKE THE UPPER LIMIT OF THE -- THE
25 UPPER READING OF ASBESTOS AT 12 PERCENT, THAT PLUS
26 THE 13 PERCENT FREE SILICA IS 25 PERCENT. SO,
27 25 PERCENT OF THE DUST WAS QUOTE, TOXIC, END QUOTE,
28 DUST.

1 THEREFORE, IF 25 PERCENT WAS TOXIC MATERIAL,
 2 THAT MEANS THAT YOU COULD UP THE LIMIT TO FOUR TIMES
 3 THAT. EACH, ASBESTOS AND SILICA, EACH HAVE A -- I
 4 USE THE TERM "TOXIC LIMIT" INTERCHANGEABLY WITH
 5 M.A.C. -- HAS AN M.A.C. OF FIVE PARTS PER MILLION.
 6 AND THE TWO OF THEM COMBINED ONLY ADD TO 25 PERCENT
 7 OF THE TOTAL SAMPLE. YOU COULD, THEREFORE, USE FOUR
 8 TIMES THE INDIVIDUAL M.A.C.

9 Q. OKAY. DID THE ESTABLISHMENT IN YOUR
 10 MIND OF A 20 MILLION PARTICLE M.A.C. FOR THIS ALGOMA
 11 DUST HAVE TO DO WITH THE FACT THAT ONLY 25 PERCENT
 12 OF IT WAS ASBESTOS OR SILICA?

13 A. ASBESTOS AND SILICA COMBINED -- OR LESS.
 14 IF YOU NOTICE, HE SAYS 5 TO 12 PERCENT
 15 ASBESTOS. THAT WAS TAKING THE MAXIMUM READING OF
 16 THE ASBESTOS.

17 Q. AND YOU SAY 20 MILLION HERE. WERE YOU
 18 REFERRING TO 20 MILLION PARTICLES PER CUBIC FOOT OF
 19 AIR?

20 A. YES. I WAS REFERRING TO THE STANDARD
 21 MILLION PARTICLES PER CUBIC FOOT OF AIR.

22 Q. SO THE UNITS OF MEASUREMENT WERE THE
 23 SAME; CORRECT?

24 A. CORRECT.

25 Q. NOW DOES THIS M.A.C. FOR THE ALGOMA DUST
 26 HAVE BUILT IN THE SAME TIME WEIGHTED AVERAGE ASPECT
 27 OF IT AS WELL?

28 A. YES.

1 THIS WOULD BE THE M.A.C. OR THE PERMISSIBLE
2 LIMIT FOR EIGHT HOURS A DAY --

3 Q. OKAY.

4 A. -- CONTINUOUS EXPOSURE.

5 Q. OKAY. AND IF YOU FOUND ANY PARTICULAR
6 LOCATION IN THE PLANT WHERE THE EXPOSURE FOR A BRIEF
7 PERIOD OF TIME WAS IN EXCESS OF 20 MILLION
8 PARTICLES, WOULD THAT MEAN THAT IT NECESSARILY WAS
9 OR WAS NOT IN EXCESS OF THE M.A.C.?

10 A. WE'D GO BACK TO THE TIME WEIGHTED
11 EXPOSURE. WE'D CONSIDER THE AMOUNT OF TIME THE MAN
12 WAS IN THE HIGHER EXPOSURE AND THE AMOUNT OF TIME
13 THAT THE MAN WAS IN THE LOWER EXPOSURE, AND WORK
14 OUT --

15 Q. OKAY.

16 A. -- AND DETERMINE WHETHER IT WAS IN THE
17 HAZARDOUS RANGE OR NOT.

18 Q. IF THE EXPOSURE TO SOME LEVEL ABOVE THE
19 20 MILLION PARTICLE M.A.C. WAS FOR LESS THAN EIGHT
20 HOURS A DAY, THEN THAT WOULDN'T NECESSARILY MEAN
21 THAT IT WAS IN EXCESS? HOW DOES THAT WORK?

22 LET ME STRIKE THAT QUESTION. I THINK THAT WAS
23 A POORLY PHRASED QUESTION.

24 I GUESS WHAT I'M TRYING TO FIGURE OUT IS THIS:
25 IF IN THE ALGOMA PLANT THERE WAS AN EXPOSURE FOR A
26 SHORT PERIOD OF TIME TO SOME LEVEL IN EXCESS OF
27 20 MILLION PARTICLES AND EXPOSURE FOR A MUCH LONGER
28 PERIOD OF TIME TO A LEVEL BELOW THE 20 MILLION

1 PARTICLE M.A.C., WHAT DOES THAT INDICATE WITH
2 RESPECT TO WHETHER OR NOT EXPOSURE IS ABOVE OR BELOW
3 THE M.A.C. ON A TIME WEIGHTED AVERAGE BASIS?

4 A. WE WOULD TAKE INTO ACCOUNT THE AMOUNT OF
5 TIME AT EACH EXPOSURE AND COME UP WITH A NUMBER THAT
6 AVERAGED OUT THE EXPOSURES --

7 Q. OKAY.

8 A. -- BASED ON THE TIME AT EACH EXPOSURE.

9 Q. MR. FLUCK, IT'S MY UNDERSTANDING, YOU
10 CORRECT ME IF I'M WRONG, PLEASE, THAT THE FOCUS OF
11 THE WORK OF THE INDUSTRIAL HYGIENE UNIT OF THE
12 WISCONSIN STATE BOARD OF HEALTH WAS HEALTH AND
13 SAFETY IN WORK PLACE?

14 A. YES.

15 Q. DID THE STATE BOARD OF HEALTH WHILE YOU
16 WERE THERE FUNCTION INDEPENDENTLY OF OUTSIDE
17 INTERESTS?

18 MR. BURGI: I'M GOING TO OBJECT TO THE
19 QUESTION ON THE GROUNDS IT CALLS FOR SPECULATION.

20 MR. RILEY: ALL RIGHT. I DON'T WANT YOU TO
21 SPECULATE. I WANT YOU TO TELL ME BASED ON YOUR
22 EXPERIENCE --

23 A. YES.

24 Q. -- WHETHER OR NOT THERE WERE OUTSIDE
25 INFLUENCES --

26 A. NO.

27 Q. -- ON YOUR WORK FOR THE STATE BOARD OF
28 HEALTH?

1 A. WE WERE VERY DEFINITELY INDEPENDENT.
2 THAT WAS OUR PRIDE. THAT'S THE THING WE CHERISHED,
3 WAS BEING INDEPENDENT OF ANY OTHER OUTSIDE SOURCES.

4 Q. WHILE YOU WERE WORKING THERE DID YOU
5 FEEL YOURSELF ^{BEHOLDEN (OF)} BEHOLDING TO ANY MANUFACTURING
6 INTERESTS?

7 A. WE WEREN'T BEHOLDING TO MANUFACTURING OR
8 TO LABOR OR ANYBODY ELSE. WE CAME UP WITH THE FACTS
9 AS WE SAW THEM.

10 Q. DID YOU WORK HARD AT YOUR JOB, SIR?

11 A. YES.

12 Q. DID YOU TAKE IT SERIOUSLY?

13 A. I CERTAINLY DID.

14 Q. DID YOU TRY TO KEEP CURRENT WITH THE
15 LITERATURE IN THE AREA OF INDUSTRIAL HYGIENE?

16 A. YES.

17 Q. AT ANY TIME DURING YOUR WORK AT THE
18 ALGOMA PLANT DID YOU FIND ANY EVIDENCE THAT THE
19 WORKERS THERE WERE AT RISK OF DEVELOPING ASBESTOS
20 RELATED DISEASE?

21 MR. BURGI: I OBJECT TO THE QUESTION ON THE
22 GROUNDS IT LACKS FOUNDATION WITH RESPECT TO HOW ANY
23 OF THESE STUDIES ARE RELATED TO THAT QUESTION.

24 MR. HARRINGTON: I'LL JOIN IN THE OBJECTION.

25 MR. RILEY: YOU GO AHEAD AND ANSWER MY
26 QUESTION, PLEASE.

27 WOULD YOU READ IT, READ THE QUESTION, PLEASE?

28 / /

1 (RECORD READ.)

2

3 THE WITNESS: NO.

4 MR. RILEY:

5 Q. WHAT DID YOU CONCLUDE ABOUT PLANT SAFETY
6 AT THE ALGOMA PLANT WITH RESPECT TO ASBESTOS, BASED
7 ON YOUR WORK THERE?

8 MR. BURGI: SAME OBJECTION.

9 THE WITNESS: IT WAS VERY GOOD.

10 MR. RILEY:

11 Q. OKAY. I HAVE NO FURTHER QUESTIONS.

12 THANK YOU, MR. FLUCK.

13 MR. BURGI: IT IS NOW 12:00. WOULD THIS BE
14 AN APPROPRIATE TIME FOR A BREAK?

15 MR. RILEY: LET'S GO OFF THE RECORD.

16 (RECESS TAKEN.)

17

18 EXAMINATION

19 BY MR. HARRINGTON:

20 Q. MR. FLUCK, I WANT TO THANK YOU, ALSO,
21 FOR ALLOWING US TO COME INTO YOUR HOME FOR THESE
22 PROCEEDINGS. IT WAS GRACIOUS OF YOU, AND WE
23 APPRECIATE THAT.

24 YOU'VE MENTIONED SOME RECOMMENDATIONS DURING
25 THE TESTIMONY THAT YOU GAVE IN RESPONSE TO
26 MR. RILEY'S QUESTIONS, RECOMMENDATIONS THAT YOU MADE
27 TO THE EMPLOYER OF MR. BRANDT AT ALGOMA -- CORRECT?
28 -- CONCERNING DUST CONTROL MEASURES?

1 A. I MADE RECOMMENDATIONS TO THAT COMPANY.
2 I DON'T KNOW, I DON'T KNOW MR. BRANDT.

3 Q. OKAY. YOU MADE RECOMMENDATIONS, AND YOU
4 IDENTIFIED THEM IN YOUR PRIOR TESTIMONY CONCERNING
5 ADDITIONAL MEASURES TO CONTROL DUST WHICH MAY
6 CONTAIN ASBESTOS FIBERS AT ALGOMA. IS THAT CORRECT,
7 SIR?

8 A. YES.

9 Q. LET ME JUST ASK YOU WHEN YOU WENT TO
10 ALGOMA, YOU WERE INVITED THERE BY THE EMPLOYER; IS
11 THAT CORRECT?

12 A. APPARENTLY. I'M NOT SURE. I HAVEN'T
13 SEEN -- I DON'T REMEMBER, AND I HAVEN'T SEEN
14 ANYTHING THAT INDICATES HOW THE STUDY STARTED.

15 Q. DO YOU RECALL WHETHER THE STATE
16 DEPARTMENT OF HEALTH, INDUSTRIAL HYGIENE UNIT, AT
17 THE TIME YOU WERE EMPLOYED BY IT HAD THE AUTHORITY
18 UNDER ANY PROVISION OF WISCONSIN LAW TO FORCE THEIR
19 WAY INTO A PLANT TO TAKE DUST STUDIES?

20 A. NO. WE DID NOT HAVE THAT AUTHORITY.

21 WE WENT ON INVITATION OR WE MIGHT REQUEST, BUT
22 OUR REQUEST HAD TO BE ACCEPTED. WE HAD NO AUTHORITY
23 TO GO INTO THE PLANT.

24 Q. SO YOU HAD TO RELY ON THE COOPERATION OF
25 THE EMPLOYER OR THE PLANT MANAGEMENT?

26 A. YES.

27 Q. OKAY. AND WITH REGARD TO THE
28 RECOMMENDATIONS THAT YOU'VE TESTIFIED YOU MADE TO

1 THE ALGOMA PLANT MANAGEMENT, DID YOU HAVE ANY
2 AUTHORITY TO FORCE THEM TO DO THOSE THINGS?

3 A. NO, WE DID NOT.

4 WE HAD -- WE COULD ONLY RECOMMEND. WE COULD
5 PRESENT THE DATA AND RECOMMEND. WE HAD NO
6 ENFORCEMENT AUTHORITY.

7 Q. OKAY. SO ONCE AGAIN, YOU WERE IN A
8 SITUATION WHERE YOU HAD TO RELY ON THE PLANT
9 MANAGEMENT AUTHORITIES TO FOLLOW THROUGH ON YOUR
10 RECOMMENDATIONS; IS THAT RIGHT?

11 A. YES.

12 Q. BECAUSE YOU COULD ONLY RECOMMEND THINGS
13 TO THE EMPLOYER, IT WAS ONLY THE EMPLOYER THROUGH
14 THE DUST CONTROL DEVICES AND METHODS WHICH YOU MIGHT
15 RECOMMEND OR OTHER INDUSTRIAL, PROFESSIONAL
16 INDUSTRIAL HYGIENISTS FROM THE STATE MAY RECOMMEND
17 TO THEM, THAT COULD INSURE THAT THE EMPLOYEES'
18 EXPOSURE TO ASBESTOS DUST IN THAT PLANT WAS WITHIN
19 THE RECOGNIZED SAFE LEVELS; IS THAT RIGHT?

20 A. WELL, WE HAD NO AUTHORITY TO -- NO
21 ENFORCEMENT AUTHORITY. BUT THERE COULD BE PRESSURE
22 PUT ON BY OTHER PERSONS.

23 Q. OKAY. IN THE LAST ANALYSIS, IT WAS
24 REALLY THE EMPLOYER THAT CONTROLLED, THROUGH
25 INITIATING EFFECTIVE DUST CONTROL MEASURES --

26 A. YES.

27 Q. -- AND THE EMPLOYEES' LEVEL OF EXPOSURE
28 TO ASBESTOS?

1 A. YES.

2 Q. AND IT WAS THE EMPLOYER, THROUGH
3 FOLLOW-THROUGH ON RECOMMENDATIONS FROM PROFESSIONALS
4 LIKE YOURSELF AND OTHER PEOPLE IN YOUR DEPARTMENT,
5 WHO COULD ULTIMATELY KEEP THE EMPLOYEES' LEVEL OF
6 EXPOSURE TO ASBESTOS FIBERS WITHIN THE RECOGNIZED
7 SAFE LIMITS, T.L.V., IS THAT RIGHT?

8 MR. BURGI: I OBJECT TO THE QUESTION ON THE
9 GROUNDS IT LACKS FOUNDATION, IMPROPERLY STATES PRIOR
10 TESTIMONY, AND IS VAGUE AND AMBIGUOUS.

11 MR. HARRINGTON: ALL RIGHT.

12 THE WITNESS: SHOULD I ANSWER THE QUESTION?

13 MR. HARRINGTON:

14 Q. I'LL TRY AND REPHRASE IT, SIR.

15 MR. BURGI: ALSO, IT CALLS FOR SPECULATION.

16 MR. HARRINGTON:

17 Q. TO YOUR KNOWLEDGE, SINCE YOUR DEPARTMENT
18 DID NOT HAVE THE AUTHORITY TO FORCE AN EMPLOYER TO
19 INITIATE DUST CONTROL MEASURES TO KEEP THE LEVELS OF
20 ASBESTOS FIBERS WITHIN RECOGNIZED SAFE LIMITS, WAS
21 THERE ANYONE ELSE WHO COULD DO THAT SORT OF THING.

22 MR. BURGI: OBJECTION, WITH RESPECT TO THE
23 FACT IT CALLS FOR SPECULATION.

24 THE WITNESS: I CAN ANSWER THAT WITHOUT
25 SPECULATING.

26 THERE ARE OTHER AGENCIES INVOLVED, YES. I
27 BELIEVE EVERY STATE HAS A LABOR DEPARTMENT OR
28 INDUSTRIAL COMMISSION OR SOME OTHER AGENCY INVOLVED

1 PRIMARILY IN SAFETY INSPECTIONS. IT MAKES ROUTINE
2 INSPECTIONS. AND THEY COULD INCLUDE EXCESSIVE DUST,
3 IF THAT WERE THERE; THEY COULD INCLUDE THAT IN THEIR
4 INSPECTIONS, AND REQUIRE -- ISSUE AN ORDER FOR
5 CONTROL.

6 I'M NOT -- I DON'T KNOW WHETHER THAT EVER
7 HAPPENED HERE, BUT THERE ARE OTHER AGENCIES WHO HAVE
8 CONTROL OR ENFORCEMENT AUTHORITY.

9 Q. OKAY. BUT CONTROL MUST START WITH THE
10 PLANT MANAGEMENT?

11 A. WELL, YES.

12 Q. AND IF PLANT MANAGEMENT ISN'T DOING
13 THEIR JOB, THEN THE OTHER AGENCIES MAY, WITH
14 APPROPRIATE REGULATORY AUTHORITY, MAY COME IN AND
15 TAKE APPROPRIATE MEASURES?

16 A. YES. THERE ARE REGULATORY AGENCIES.

17 MR. BURGI: SAME OBJECTION TO THIS LINE OF
18 QUESTIONING ON THE GROUNDS IT CALLS FOR SPECULATION.

19 MR. HARRINGTON:

20 Q. WERE YOU A MEMBER OF THE A.C.G.I.H.
21 YOURSELF?

22 A. YES.

23 Q. OKAY. FROM WHAT YEARS WERE YOU A
24 MEMBER, SIR?

25 A. FROM 1937 TILL TODAY. I AM NOW AN
26 EMERITUS MEMBER.

27 Q. WAS DR. BREHM FROM WISCONSIN ALSO A
28 MEMBER?

1 A. YES, HE WAS. HE WAS TWICE CHAIRMAN OF
2 THE ORGANIZATION.

3 Q. SO WISCONSIN WAS WELL REPRESENTED IN THE
4 EARLY YEARS OF THE A.C.G.I.H.?

5 A. YES.

6 MR. BURGI: I OBJECT TO THE QUESTION ON THE
7 GROUNDS IT CALLS FOR SPECULATION.

8 MR. HARRINGTON:

9 Q. DO YOU KNOW, SIR, WHEN THE FIRST MAXIMUM
10 ACCEPTABLE CONCENTRATIONS FOR DANGEROUS SUBSTANCES
11 WERE PREPARED?

12 MR. RILEY: DID YOU MEAN TO MESS UP THE
13 PHRASE? SO FAR IT'S BEEN REFERRED TO AS MAXIMUM
14 ALLOWABLE CONCENTRATIONS.

15 MR. HARRINGTON: I DIDN'T MEAN TO MESS IT
16 UP.

17 MR. RILEY: OKAY.

18 MR. HARRINGTON:

19 Q. DO YOU KNOW WHEN THE FIRST MAXIMUM
20 ALLOWABLE CONCENTRATIONS FOR DANGEROUS SUBSTANCES
21 OCCURRED?

22 MR. BURGI: OBJECT ON THE GROUNDS IT'S
23 VAGUE AND AMBIGUOUS.

24 MR. RILEY: I'LL OBJECT TO THE PHRASE
25 "DANGEROUS SUBSTANCES," AS WELL.

26 MR. BURGI: IT'S VERY BROAD.

27 THE WITNESS: THERE HAVE BEEN MAXIMUM
28 ALLOWABLE CONCENTRATIONS SINCE PROBABLY 1915 OR '20,

1 BUT THERE WAS NEVER A COMPREHENSIVE LIST OF THEM
2 UNTIL THE TIME OF OR SLIGHTLY AFTER THIS 1937
3 SYMPOSIUM OR COURSE OR WHATEVER ONE CHOOSES TO CALL
4 IT THAT THE PUBLIC HEALTH SERVICE HAD.

5 THERE WERE SCATTERED LISTS, AS BUREAU
6 STANDARDS HAD PERHAPS TWENTY. SOME STATES MIGHT PUT
7 OUT FIVE OR TEN OR FIFTEEN, BUT THERE WAS NOT A
8 COMPREHENSIVE LIST UNTIL THE MID '30'S, LATE '30'S.

9 MR. HARRINGTON:

10 Q. THE COMPREHENSIVE LIST THAT YOU REFERRED
11 TO --

12 A. I MEAN MORE THAN JUST ONE OR TWO
13 SUBSTANCES. THERE ARE HALF A DOZEN SUBSTANCES.

14 Q. THE COMPREHENSIVE LIST THAT YOU REFERRED
15 TO, SIR, DO YOU KNOW WHETHER THAT LIST CONTAINED
16 MAXIMUM ALLOWABLE CONCENTRATIONS FOR ASBESTOS
17 FIBERS?

18 A. IT DOES NOW, IT HAS FOR MANY YEARS, BUT
19 I DON'T KNOW WHEN, I DON'T KNOW WHEN IT WAS FIRST
20 ESTABLISHED.

21 WELL, IT -- OBVIOUSLY, IT WAS THERE IN '48 OR
22 '49 WHEN I MADE MY STUDY. THAT MUCH I COULD SAY,
23 BECAUSE THAT'S WHAT I USED.

24 Q. WAS THAT A STANDARD ESTABLISHED BY THE
25 SUBCOMMITTEE ON THRESHOLD LIMITS OF THE A.C.G.I.H.?

26 A. YES.

27 Q. WE'VE ESTABLISHED THAT WAS 5.0 MILLION
28 PARTICLES PER CUBIC FOOT?

1 A. YES.

2 Q. THAT WAS FOR ASBESTOS; CORRECT?

3 A. CORRECT.

4 Q. DID THAT STANDARD, SIR, AS FAR AS BASED
5 UPON YOUR KNOWLEDGE AND EXPERIENCE AS AN INDUSTRIAL
6 HYGIENIST AND A MEMBER OF THE A.C.G.I.H. AT THE
7 TIME, COMPRISE A CONSENSUS OPINION OF INDUSTRIAL
8 HYGIENISTS IN THIS COUNTRY CONCERNING RECOGNIZED
9 SAFE LEVELS FOR ASBESTOS?

10 A. VERY DEFINITELY. YES.

11 Q. WAS THE M.A.C. FOR ASBESTOS FIBER
12 PUBLISHED IN VARIOUS MEDICAL AND TRADE PUBLICATIONS
13 AT ABOUT THAT TIME?

14 MR. BURGI: OBJECT TO THE QUESTION AS VAGUE.

15 THE WITNESS: IT WAS PUBLISHED, YES. IT'S
16 PUBLISHED ANNUALLY IN THE PROCEEDINGS OF THE
17 AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL
18 HYGIENISTS, AND THAT OF COURSE IS COPIED IN MANY OF
19 THE PROFESSIONAL JOURNALS THAT APPLY TO THE
20 INDUSTRIAL HYGIENE AND INDUSTRIAL MEDICINE AND
21 RELATED PROFESSIONS.

22 MR. HARRINGTON:

23 Q. OKAY. JUST SO I CAN SATISFY THE
24 OBJECTION, I'M GOING TO REPHRASE THAT QUESTION.

25 TO YOUR KNOWLEDGE, SIR, IN WHAT PUBLICATIONS
26 WAS THE MAXIMUM ALLOWABLE CONCENTRATION FOR ASBESTOS
27 FIBERS PUBLISHED SINCE THE ENACTMENT AS WE'VE
28 DESCRIBED BY THE A.C.G.I.H.?

1 A. IN THEIR OWN PUBLICATION, IS THE ONE I'M
2 SURE OF. OTHER THAN THAT, I DON'T REALLY KNOW. BUT
3 THEY PUT OUT THEIR OWN LISTING, AND I'M FAIRLY
4 CERTAIN THAT IT'S PUBLISHED IN THE JOURNAL OF
5 INDUSTRIAL HYGIENE TOXICOLOGY.

6 IT'S PUBLISHED IN PROFESSIONAL SAFETY-TYPE
7 JOURNALS. THAT I KNOW, BECAUSE I'VE SEEN IT. I
8 CAN'T GIVE YOU THE NAMES OF THESE BECAUSE I'VE
9 FORGOTTEN THE NAMES.

10 Q. GO AHEAD. I DIDN'T WANT YOU TO -- IF
11 YOU WERE --

12 A. I'M JUST DREDGING BACK IN MY MEMORY.

13 Q. OKAY. WE'RE USING THE TERM FOR THE
14 EARLY YEARS "MAXIMUM ALLOWABLE CONCENTRATIONS"?

15 A. YES.

16 Q. THERE IS ALSO A TERM THAT'S USED LATER
17 ON CALLED "THRESHOLD LIMIT VALUE"?

18 A. YES.

19 Q. ARE THOSE THE SAME THINGS?

20 A. ESSENTIALLY, YES.

21 IT WAS -- FOR MANY YEARS IT WAS REALIZED THE
22 TERM MAXIMUM ALLOWABLE CONCENTRATION DID NOT GIVE A
23 PROPER MEANING TO IT. IT'S NOT THE MAXIMUM
24 ALLOWABLE CONCENTRATION, IT'S A GUIDELINE.

25 AND THE TERM THRESHOLD LIMIT WAS CONSIDERED A
26 MORE MEANINGFUL TERM BECAUSE IT'S NOT A MAXIMUM
27 ALLOWABLE CONCENTRATION. THRESHOLD LIMIT MEANS
28 SOMETHING YOU AIM AT.

1 Q. BUT JUST --

2 A. THAT IS THE SAME THING. THE NUMBERS ARE
3 THE SAME. THE NUMBERS ARE TRANSPOSABLE FROM ONE TO
4 THE OTHER.

5 Q. THE FACT IS THAT LATER, M.A.C.'S BEGAN
6 BEING REFERRED TO AS T.L.V.'S?

7 A. CORRECT.

8 Q. OKAY. BASED UPON YOUR EXPERIENCE IN THE
9 EARLY YEARS AS BEING ONE OF THE VERY EARLY
10 CONTRIBUTORS AND FOUNDING PROFESSIONALS OF THE
11 A.C.G.I.H., DO YOU KNOW UPON WHAT INFORMATION THE
12 MAXIMUM ALLOWABLE CONCENTRATIONS THAT WERE
13 ESTABLISHED BY THAT GROUP WERE BASED UPON?

14 MR. BURGI: I'M GOING TO OBJECT TO THE
15 QUESTION ON THE GROUNDS IT STATES FACTS THAT ARE NOT
16 IN EVIDENCE AND MISSTATES PRIOR TESTIMONY.

17 MR. HARRINGTON: IN WHAT REGARD?

18 MR. BURGI: YOU SAID HE WAS ONE OF THE
19 FOUNDING -- I UNDERSTAND HE WAS AN EARLY MEMBER, BUT
20 I DON'T RECALL ANY TESTIMONY THAT HE FOUNDED THE
21 ORGANIZATION.

22 MR. HARRINGTON: THAT'S OBJECTIONABLE. I'LL
23 REPHRASE THE QUESTION.

24 Q. BASED UPON YOUR EXPERIENCE AND KNOWLEDGE
25 AS ONE OF THE EARLY MEMBERS OF THE A.C.G.I.H., DO
26 YOU KNOW UPON WHAT INFORMATION THE MAXIMUM ALLOWABLE
27 CONCENTRATIONS THAT WERE SET BY THAT ORGANIZATION,
28 WHAT GENERIC TYPES OF INFORMATION THOSE WERE BASED

1 ON?

2 A. THE GROUP THAT MADE THIS DETERMINATION
3 REVIEWED EVERY PIECE OF LITERATURE AVAILABLE TO IT.
4 AND BELIEVE ME, THEY MADE IT A VERY, VERY THOROUGH
5 REVIEW. EVERY PUBLISHED STUDY THERE WAS IN ANY
6 JOURNAL WHATSOEVER, WHETHER IT IS THE JOURNAL OF NEW
7 ENGLAND MEDICINE, THE GERMAN PUBLICATIONS, THE
8 RUSSIANS, EVERYBODY ELSE, THEY REVIEWED EVERYTHING
9 THAT WAS AVAILABLE. THEN THEY CONFERRED WITH OTHER
10 EXPERTS IN THE FIELD AND CAME UP WITH A CONSENSUS
11 OPINION THAT WAS BASED ON THE BEST AVAILABLE
12 KNOWLEDGE AT THE TIME. THE TOP BRAINS AND ALL THE
13 LITERATURE THAT WAS AVAILABLE.

14 Q. DO YOU RECALL, SIR, WHETHER OR NOT THAT
15 LITERATURE AND THOSE STUDIES WHICH YOU HAVE REFERRED
16 TO AS BEING AVAILABLE AT THE TIME INCLUDED
17 TOXICOLOGICAL STUDIES ON ANIMALS?

18 A. THERE WERE MANY PEOPLE DOING
19 TOXICOLOGICAL STUDIES ON ANIMALS, YES.

20 THE PUBLIC HEALTH SERVICE DID IT, THERE WERE
21 VARIOUS RESEARCH GROUPS, MEDICAL ORGANIZATIONS --
22 PROBABLY JOHNS-HOPKINS, HARVARD, YALE -- ALL OF
23 THESE PEOPLE, PLUS PROBABLY PRIVATE ORGANIZATIONS
24 WERE DOING TOXICOLOGICAL RESEARCH. THEY HAVE BEEN
25 FOR YEARS, AND IT WAS INCREASED AFTER THE EMPHASIS
26 ON INDUSTRIAL HYGIENE.

27 YES. TOXICOLOGICAL RESEARCH INCLUDING
28 ANIMALS.

1 Q. DO YOU RECALL THAT TOXICOLOGICAL
2 RESEARCH INCLUDING STUDIES PERTAINING TO ASBESTOS
3 FIBERS?

4 A. I DON'T RECALL A SPECIFIC ONE, NO.

5 Q. YOU ARE NOT SAYING THAT DIDN'T HAPPEN,
6 YOU JUST DON'T HAVE A PRESENT --

7 A. THAT'S RIGHT.

8 Q. -- RECOLLECTION?

9 SIR, WAS IT ONE OF THE RESPONSIBILITIES OF THE
10 WISCONSIN DEPARTMENT OF HEALTH, INDUSTRIAL HYGIENE
11 DIVISION, IN THE 1940'S, WHEN YOU WERE EMPLOYED WITH
12 IT, TO ADVISE INDUSTRIES IN THE STATE ON HOW TO
13 PROTECT THEIR EMPLOYEES FROM POSSIBLE HARMFUL
14 SUBSTANCES THAT WOULD BE FOUND IN THE WORK PLACE?

15 A. I DON'T UNDERSTAND JUST WHAT YOU MEAN BY
16 THAT. COULD YOU CLARIFY IT A LITTLE BIT?

17 Q. LET ME SEE IF I CAN REPHRASE THAT.

18 YOU WERE CONCERNED IN THE INDUSTRIAL HYGIENE
19 DEPARTMENT IN THE '40'S WITH, AND I BELIEVE YOU'VE
20 ALREADY TESTIFIED, LOCATING POTENTIAL HAZARDS IN THE
21 WORK PLACE AND RECOMMENDING TO THAT INDUSTRY METHODS
22 TO ELIMINATE OR DIMINISH A POTENTIAL HAZARD?

23 A. YES.

24 Q. AND THAT WAS REALLY SORT OF AN
25 EDUCATIONAL PROCESS THAT YOU WOULD GO THROUGH WITH
26 THE PARTICULAR INDUSTRY, WASN'T IT?

27 A. YES.

28 Q. IT WAS A TRANSMITTAL OF INFORMATION FROM

1 THE PROFESSIONALS AT THE DEPARTMENT OF INDUSTRIAL
2 HYGIENE TO THOSE PEOPLE IN THAT PARTICULAR PLANT OR
3 INDUSTRY?

4 A. RIGHT.

5 Q. AND THAT'S WHAT YOU DID WITH THE ALGOMA
6 PLANT WHEN YOU WERE CONDUCTING THE STUDIES AND
7 TRANSMITTING THAT INFORMATION TO THEM; CORRECT?

8 A. THAT'S RIGHT.

9 Q. YOU WERE INFORMING THEM OF A POTENTIAL
10 HAZARD WHICH MAY EXIST TO THEIR EMPLOYEES FROM THE
11 WORK PLACE AND STUDYING THAT AND RECOMMENDING
12 CERTAIN ALTERNATIVE RECOMMENDATIONS?

13 MR. RILEY: EXCUSE ME A SECOND. I'M GOING
14 TO OBJECT TO THE FORM OF THAT QUESTION. THAT JUST
15 -- THE SUGGESTION THAT HE TOLD THEM THAT THEY DID
16 HAVE A HAZARDOUS SITUATION ABSOLUTELY FLIES IN THE
17 FACE OF EVERYTHING THAT HE SAID TODAY. THAT
18 MISSTATES THE PRIOR TESTIMONY.

19 MR. HARRINGTON: THAT WAS NOT MY INTENT.
20 THAT WAS NOT MY INTENT OF PHRASING THE QUESTION THAT
21 WAY.

22 MR. BURGI: WAS THERE SOME OBJECTION TO THE
23 QUESTION OTHER THAN THE MANNER?

24 MR. RILEY: I OBJECT TO THE FORM OF THE
25 QUESTION, BECAUSE IT MISSTATES PRIOR TESTIMONY. IT
26 SNEAKS IT IN -- NOT INTENTIONALLY -- IT'S PUT IN AS
27 A PREDICATE TO A DIFFERENT QUESTION, KIND OF A
28 BEATING-YOUR-WIFE QUESTION. IT WAS IMPLICIT, AND

1 THE WITNESS HAD NO OPPORTUNITY IN ANSWERING THE
2 QUESTION AS PHRASED TO POINT THAT OUT.

3 MR. BURGI: I DON'T SEE IT, BUT --

4 MR. HARRINGTON: LET'S GO ABOUT THIS ANOTHER
5 WAY.

6 Q. WHEN YOU LEARNED THAT ASBESTOS FIBERS
7 WERE BEING USED AT THE ALGOMA PLANT, THAT RAISED AT
8 LEAST A POTENTIAL HAZARD OR THE QUESTION OF A
9 POTENTIAL HAZARD TO THOSE EMPLOYEES AT THAT PLANT;
10 IS THAT CORRECT?

11 A. POTENTIAL, YES.

12 Q. AND YOU COMMUNICATED THAT FACT TO THE
13 MANAGEMENT AT ALGOMA?

14 A. I DON'T KNOW BUT WHAT THEY KNEW ABOUT IT
15 BEFORE WE DID, BECAUSE I DO NOT -- I CAN'T RECALL
16 HOW -- WHAT INSTIGATED THE STUDY.

17 IT COULD -- VERY LIKELY IT'S THAT THEY KNEW OF
18 A POTENTIAL, POTENTIAL HAZARD, AND ASKED US TO COME
19 IN. I'M 99 PERCENT CERTAIN THAT'S WHAT HAPPENED.
20 THAT'S THE WAY MOST OF OUR STUDIES WERE MADE.

21 SO, WE DIDN'T GO TO THEM AND SAY "YOU HAVE A
22 POTENTIAL HAZARD, WE WANT TO EXPLORE IT."

23 Q. I UNDERSTAND YOUR TESTIMONY, AND THAT'S
24 FINE.

25 WHAT YOU ARE SAYING IS REALLY YOU THINK THAT
26 THEY WERE IN TERMS OF THEIR PARTICULAR PLANT, WERE
27 AHEAD OF YOU IN RECOGNIZING A POTENTIAL HAZARD IN
28 THEIR PLANT; IS THAT CORRECT?

1 A. YES.

2 Q. AND THEN THEY CALLED YOU IN TO ASSIST
3 THEM IN STUDYING THE PROBLEM?

4 A. THAT'S WHAT I THINK. THAT'S THE BEST OF
5 MY RECOLLECTION AS TO THE ORIGIN OF THE STUDY.

6 Q. DO YOU HAVE ANY KNOWLEDGE, SIR, AS TO
7 WHETHER SUCH STUDIES OR INVITATIONS TO THE
8 DEPARTMENT OF HEALTH, INDUSTRIAL HYGIENE DIVISION,
9 WERE MADE BY THE ALGOMA PLANT AFTER YOU LEFT?

10 A. I HAVE NO FIRST-HAND KNOWLEDGE OF THAT,
11 NO.

12 Q. SO THAT WOULD BE AFTER I THINK IT WAS
13 DECEMBER OF '49 YOU SAID YOU LEFT THE DEPARTMENT?

14 A. THAT'S RIGHT.

15 Q. AND YOU HAVE NO FIRST-HAND KNOWLEDGE
16 THERE?

17 A. NO, I DO NOT.

18 Q. HAVE YOU HEARD ANYTHING ABOUT IT FROM
19 ANYONE ELSE?

20 A. YES. I'VE HEARD THAT THERE ARE STUDIES
21 MADE AFTER I LEFT.

22 Q. CAN YOU TELL ME WHEN THEY WERE MADE?

23 A. NO.

24 Q. DO YOU KNOW WHO MADE THEM?

25 A. WHOEVER WAS AT THE INDUSTRIAL HYGIENE
26 UNIT AT THE TIME.

27 IT COULD HAVE BEEN -- THERE HAVE ONLY BEEN
28 THREE PEOPLE THERE SINCE ME THAT I KNOW -- WELL,

1 FOUR -- WELL, WHOEVER WAS THERE. WILLIAM ~~LEAR~~^{LEA},
2 EDWARD OTTERSON, OR WALTER ~~POPPY~~^{TOPPE} ARE THE ONLY NAMES
3 THAT I RECALL WHO HAVE BEEN THERE SINCE I HAVE.

4 I DON'T KNOW WHOSE THERE NOW. I'VE LOST
5 CONTACT FIVE YEARS OR MORE AGO.

6 Q. YOU DON'T RECALL WHAT YEARS THESE
7 STUDIES MAY HAVE OCCURRED?

8 A. NO.

9 Q. WERE YOU AT ANY TIME A MEMBER OF THE
10 INDUSTRIAL HYGIENE SECTION OF THE AMERICAN PUBLIC
11 HEALTH ASSOCIATION?

12 A. FOR A VERY SHORT TIME. I FOUND IT --
13 I'VE BEEN A MEMBER OF SO MANY ORGANIZATIONS, THAT
14 ONE DIDN'T SEEM WORTHWHILE.

15 Q. OKAY. DID YOU EVER ATTEND ANY ANNUAL
16 MEETINGS OF THAT ORGANIZATION?

17 A. THE PUBLIC HEALTH ASSOCIATION?

18 Q. YES.

19 A. NO.

20 Q. OKAY.

21 Q. I TAKE IT FROM YOUR PRIOR TESTIMONY THAT
22 IT'S YOUR BELIEF THAT EXPOSURE TO AIRBORNE ASBESTOS
23 FIBERS BELOW THE MAXIMUM ALLOWABLE CONCENTRATION OR
24 THRESHOLD LIMIT VALUE IS SAFE?

25 MR. RILEY: YOU'VE GOT THAT PHRASE IN THE
26 PRESENT TEST. ARE YOU TALKING ABOUT HIS --

27 MR. HARRINGTON:

28 Q. AT THE TIME THAT YOU MADE THE STUDIES AT

1 ALGOMA.

2 A. THAT WAS MY CONCLUSION AT THAT TIME,
3 YES.

4 Q. YOU WERE ALSO OF THE OPINION AT THE TIME
5 THAT IF C E WERE EXPOSED TO LEVELS OF ASBESTOS
6 FIBERS ABOVE THE MAXIMUM ALLOWABLE CONCENTRATION
7 THAT COULD PRESENT A POTENTIAL HEALTH HAZARD --

8 MR. RILEY: EXCUSE ME A SECOND. I'M
9 GOING TO OBJECT TO THE FORM OF THE QUESTION.

10 I THINK IT'S VAGUE AND AMBIGUOUS, BECAUSE I
11 CAN'T TELL FROM YOUR QUESTION WHETHER YOU MEAN TO
12 INCLUDE IN THAT THE NOTICE OF TIME WEIGHTED AVERAGE,
13 WHETHER YOU MEAN A SINGLE EXPOSURE TO A LEVEL ABOVE
14 THE M.A.C., OR WHETHER YOU MEAN SOMETHING THAT ON A
15 TIME WEIGHTED AVERAGE BASIS IS ABOVE THE M.A.C.

16 AND BECAUSE OF THAT AMBIGUITY I WOULD OBJECT.
17 I THINK YOU CAN JUST CLARIFY IT AND ELIMINATE THE
18 PROBLEM.

19 MR. HARRINGTON: I'M JUST ASKING IT IN A
20 GENERAL WAY, IN THE SIMPLEST TERMS POSSIBLE, SO THAT
21 IT'S THE MOST UNDERSTANDABLE.

22 MR. RILEY: WELL, THE BASIS FOR MY OBJECTION
23 IS THAT I DON'T THINK THAT KIND OF A SIMPLIFICATION
24 MAKES ANYTHING CLEAR. I THINK IT MAKES IT MUCH MORE
25 CONFUSING.

26 MR. HARRINGTON: I THINK THAT THE WITNESS
27 CAN ELABORATE IN HIS ANSWER IF HE WANTS TO.

28 Q. LET ME JUST ASK THE QUESTION OVER AGAIN,

1 AND THEN YOU CAN ANSWER, SIR.

2 YOU ALSO FELT AT THE TIME THAT YOU WERE DOING
3 THE STUDIES IN ALGOMA THAT EXPOSURES TO ASBESTOS
4 OVER THE THRESHOLD LIMIT VALUE COULD HAVE POTENTIAL
5 -- NOW I DID IT AGAIN, EXCUSE ME -- OVER THE MAXIMUM
6 ALLOWABLE CONCENTRATION, COULD HAVE A POTENTIAL
7 HEALTH HAZARD.

8 MR. RILEY: I'M GOING TO MAKE THE SAME
9 OBJECTION, BECAUSE YOU HAVE NOT MADE IT CLEAR
10 WHETHER YOU MEAN TO INCLUDE THE TIME WEIGHTED
11 AVERAGE ASPECT INVOLVED THIS.

12 MR. HARRINGTON:

13 Q. YOU CAN GO AHEAD AND ANSWER.

14 A. I CAN GIVE A QUALIFIED ANSWER.
15 EXPOSURES TO LEVELS OVER THE M.A.C. FOR A PROLONGED
16 PERIOD OF TIME -- I MEAN AVERAGE EXPOSURES OVER THE
17 M.A.C. FOR A PROLONGED PERIOD OF TIME COULD POSSIBLY
18 RESULT IN ASBESTOSIS.

19 IT WOULD HAVE TO BE -- THEY WOULD NUMBER 1,
20 HAVE TO BE ABOVE THAT M.A.C., PROBABLY CONSIDERABLY
21 ABOVE. BECAUSE REMEMBER, THERE ARE SAFETY FACTORS
22 BUILT INTO THESE M.A.C.'S.

23 IT HAS TO BE CONSIDERABLY ABOVE THE M.A.C.,
24 AND IT WOULD HAVE TO AVERAGE OUT, OR ON A TIME
25 WEIGHTED BASIS, BE ABOVE THE M.A.C. SHORT-TERM
26 EXPOSURES OVER THAT LIMIT, EVEN QUITE A BIT ABOVE
27 THAT LIMIT, WOULD NOT, WOULD PROBABLY NOT RESULT IN
28 ASBESTOSIS.

1 Q. THE FACT THAT EXPOSURES OVER THE M.A.C.
2 AS YOU DESCRIBED IN YOUR ANSWER MAY LEAD TO
3 POTENTIAL HEALTH HAZARD WAS SOMETHING WHICH WAS
4 KNOWN TO YOU AND OTHER INDUSTRIAL HYGIENISTS AT THE
5 TIME OF YOUR STUDIES AT ALGOMA; IS THAT CORRECT?

6 A. YES.

7 MR. RILEY: OBJECT TO THE FORM OF THE
8 QUESTION.

9 MR. HARRINGTON: WAS THERE AN OBJECTION TO
10 THAT QUESTION?

11 MR. RILEY: UH-HUH. THE FORM OF THE
12 QUESTION.

13 MR. BURGI: HE RESPONDED, AS WELL.

14 MR. HARRINGTON: ALL RIGHT.

15 MAY I JUST HEAR THE QUESTION AGAIN SO THAT I
16 CAN SEE IF I WANT TO STICK WITH THAT PHRASING?

17 (RECORD READ.)

18

19 MR. HARRINGTON:

20 Q. WHAT WAS AT THE TIME THAT YOU WERE DOING
21 THE STUDIES AT ALGOMA THE EXTENT OF YOUR KNOWLEDGE
22 AND TO YOUR KNOWLEDGE OTHER INDUSTRIAL HYGIENISTS
23 WHO WERE A MEMBER OF THE MEMBERS OF THE A.C.G.I.H.
24 CONCERNING POSSIBLE HEALTH HAZARDS OF ASBESTOS
25 EXPOSURES OVER THE M.A.C.?

26 MR. RILEY: JUST SO WE'RE CLEAR, DO YOU MEAN
27 OVER THE M.A.C. AS HE'S DESCRIBED IT FOR A PROLONGED
28 -- HE SAID CONSIDERABLY ABOVE THE M.A.C. FOR A

1 PROLONGED PERIOD OF TIME, AVERAGED, ON A
2 TIME-WEIGHTED AVERAGE BASIS? IF THAT'S WHAT YOU
3 MEAN AND THAT CAN BE OUR SHORTHAND, THAT'S FINE.

4 IF THERE'S GOING TO BE SOME AMBIGUITY BECAUSE
5 IT'S NOT REPEATED EACH TIME, THEN I WOULD OBJECT.

6 MR. BURGI: I'M SORRY. I ALSO HAVE TO
7 OBJECT IN THAT WE'VE NOT ESTABLISHED THAT ANY OTHER
8 MEMBERS OF THE A.C.G.I.H. IN FACT SHARED HIS
9 DESCRIPTION OF THE OTHER FACTORS IN ADDITION TO
10 BEING ABOVE THE T.L.V.

11 MR. HARRINGTON:

12 Q. YOU CAN GO AHEAD AND ANSWER IF YOU CAN.

13 A. THERE ARE STUDIES IN ASBESTOS USING
14 INDUSTRIES THAT SHOW THAT THERE IS SUCH A THING AS A
15 DISEASE CALLED ASBESTOSIS THAT OCCURRED TO A FEW
16 PEOPLE AT VERY HIGH CONCENTRATIONS OF ASBESTOS IN
17 THE AIR OVER VERY LONG PERIODS OF TIME. THAT WAS
18 THE EXTENT OF OUR KNOWLEDGE.

19 THERE WAS SUCH A THING AS ASBESTOSIS -- WHICH
20 YOU'LL HAVE TO GET A DEFINITION FROM A DOCTOR,
21 THERE ARE STUDIES THAT DEFINE SUCH A DISEASE --
22 IN VERY SMALL, VERY LOW NUMBERS COMPARED TO
23 SOMETHING LIKE SILICOSIS. BUT THERE WAS SUCH A
24 DISEASE, APPARENTLY, AS ASBESTOSIS. THERE ARE
25 PUBLISHED STUDIES THAT SHOW THAT.

26 AND AS I RECALL, IN EVERY CASE THE
27 CONCENTRATIONS WERE VERY, VERY HIGH AND OVER LONG,
28 LONG PERIODS OF TIME.

1 Q. AND THOSE STUDIES THAT YOU REFERRED TO
2 THAT TALKED ABOUT ASBESTOSIS WERE AVAILABLE IN
3 THE --

4 A. YES.

5 Q. -- '40'S?

6 A. THEY WERE PUBLISHED IN THE STANDARD
7 JOURNALS. THEY WERE VERY AVAILABLE TO EVERYBODY.

8 Q. AT THE TIME YOU WERE PERFORMING YOUR
9 WORK AT ALGOMA?

10 A. YES.

11 Q. I THINK YOU ALREADY IDENTIFIED ONE OF
12 THOSE AS EXHIBIT ONE HERE TODAY?

13 MR. RILEY: NO. WAIT. WAIT. WAIT. YOU'VE
14 JUST CHARACTERIZED EXHIBIT ONE IN A WAY -- THIS MAN
15 HASN'T TESTIFIED AT ALL WITH REGARDS TO THE
16 SUBSTANCE OF EXHIBIT ONE.

17 IF YOU TRY TO PUT IT INTO THAT PIGEONHOLE, I
18 THINK IT'S INAPPROPRIATE. I OBJECT TO THAT. HE
19 HADN'T DESCRIBED THAT ARTICLE IN THAT FASHION.

20 MR. HARRINGTON:

21 Q. WELL, SIR YOU HAVE REFERRED TO SOME
22 ARTICLES AND STUDIES THAT WERE AVAILABLE AT THE
23 TIME, AND YOU PREVIOUSLY IDENTIFIED EXHIBIT NUMBER
24 ONE, WHICH IS A 1938 STUDY.

25 IS THAT ONE OF THE STUDIES THAT YOU WERE
26 REFERRING TO?

27 MR. RILEY: REFERRING TO WHEN? I JUST DON'T
28 UNDERSTAND.

1 MR. HARRINGTON: AS BEING AVAILABLE AND
2 CONCERNING ASBESTOSIS AT ABOUT THE TIME THAT HE WAS
3 WORKING AT ALGOMA AS AN INDUSTRIAL HYGIENIST.

4 MR. RILEY: THAT'S THE EXTENT OF YOUR
5 CHARACTERIZATION?

6 MR. HARRINGTON: I'M ASKING HIM IF THAT WAS
7 ONE OF THE STUDIES THAT WAS AVAILABLE.

8 THE WITNESS: THIS WAS AVAILABLE TO US AND
9 TO ALL INDUSTRIAL HYGIENISTS AND ANYONE ELSE
10 INTERESTED ON THE SUBJECT. THIS IS A PUBLICATION OF
11 THE PUBLIC HEALTH -- IT'S A PUBLIC HEALTH BULLETIN
12 DONE BY THE PUBLIC HEALTH SERVICE BY THE NATIONAL
13 INSTITUTE OF HEALTH. IT WAS AVAILABLE TO ALL OF US.

14 IN FACT, WE ALL RECEIVED COPIES. EVERY
15 INDUSTRIAL HYGIENE UNIT RECEIVED COPIES. IT'S
16 AVAILABLE TO SAFETY PEOPLE, IT WAS AVAILABLE TO
17 INDUSTRY IF THEY WERE INTERESTED, IT'S AVAILABLE TO
18 ANYBODY. IT'S A GOVERNMENT PUBLICATION. IT'S
19 AVAILABLE.

20 MR. HARRINGTON:

21 Q. YOU WERE REFERRING TO EXHIBIT NUMBER
22 ONE; CORRECT?

23 A. THE ONE I HAD IN MY HAND. THAT'S
24 EXHIBIT --

25 MR. RILEY: THAT'S ONE.

26 MR. HARRINGTON: THAT'S ONE.

27 MR. RILEY: OFF THE RECORD.

28 MR. HARRINGTON: LET'S JUST SAY ON THE

1 RECORD THAT WE HAVE STIPULATED THAT WHAT THE WITNESS
2 WAS REFERRING TO WAS EXHIBIT NUMBER ONE.

3 MR. BURGI: SO STIPULATED.

4 MR. HARRINGTON:

5 Q. SIR, WOULD YOU REFER TO DETJIN EXHIBIT
6 NUMBER FOURTEEN AGAIN?

7 REFERRING TO THE FIRST ENTRY ON THE SECOND
8 PAGE, THE DUST COUNT --

9 A. YES.

10 Q. -- IT SAYS 40.5, AND I THINK THAT'S
11 MILLION PARTICLES PER CUBIC FOOT OF AIR?

12 A. YES.

13 Q. SIR, WAS THAT DUST COUNT, 40.5, AT THAT
14 LOCATION ON THAT DAY AS REFLECTED BY EXHIBIT NUMBER
15 FOURTEEN OVER OR UNDER THE MAXIMUM ALLOWABLE
16 CONCENTRATION FOR ASBESTOS FIBERS ESTABLISHED BY THE
17 A.C.G.I.H.?

18 MR. RILEY: EXCUSE ME FOR A MOMENT.

19 I OBJECT TO THE FORM OF THE QUESTION. I THINK
20 IT'S VAGUE AND AMBIGUOUS AS STATED. IT'S AGAIN
21 UNCLEAR AS TO WHETHER YOU ARE TAKING INTO ACCOUNT
22 WHAT HE HAS TESTIFIED HE TOOK INTO ACCOUNT IN TERMS
23 OF TIME WEIGHTED AVERAGES AND THE DILUTED ASBESTOS
24 CONTENTS OF THE DUST, THE SAMPLES. I DON'T THINK
25 IT'S A FAIR QUESTION AS PHRASED.

26 MR. HARRINGTON:

27 Q. YOU CAN ANSWER.

28 MR. RILEY: GO AHEAD AND ANSWER OVER THE

1 OBJECTION.

2 THE WITNESS: IF ONE WERE EXPOSED TO THAT
3 CONCENTRATION FOR PROLONGED PERIODS, SUCH AS EIGHT
4 HOURS A DAY, IT WOULD BE OVER THE M.A.C.

5 MR. HARRINGTON:

6 Q. WHAT ABOUT THE SECOND ENTRY ON THAT
7 PAGE?

8 A. WOULD YOU REPEAT THAT, PLEASE?

9 Q. WHAT ABOUT THE SECOND ENTRY ON THE SAME
10 PAGE OF EXHIBIT NUMBER FOURTEEN? IS THAT OVER OR
11 UNDER?

12 MR. RILEY: SAME OBJECTION. IT'S VAGUE AND
13 AMBIGUOUS AS TO WHETHER YOU MEAN TO INCLUDE TIME
14 WEIGHTED AVERAGE AND THE DILUTION OF THE DUST COUNT.

15 THE WITNESS: SHOULD I ANSWER THAT QUESTION?

16 MR. RILEY: GO AHEAD. YES, SIR.

17 THE WITNESS: MY ANSWER IS THE SAME.

18 IF THAT WERE FOR EIGHT HOURS A DAY FOR A
19 LIFETIME, IT WOULD BE OVER THE M.A.C.

20 MR. HARRINGTON:

21 Q. WITH REGARD TO --

22 A. MAY I QUALIFY THAT?

23 NOT NECESSARILY. AS WE GOT FURTHER
24 INFORMATION ABOUT THE CONTENT OF THE DUST, KNOWING
25 THAT IT'S ONLY A RELATIVELY LOW PERCENTAGE OF SILICA
26 AND ASBESTOS, THIS WOULD BE CONSIDERED A BORDERLINE
27 SITUATION, VERY DEFINITELY A BORDERLINE SITUATION.

28 Q. YOU ARE REFERRING TO --

1 A. EVEN IF IT WERE EIGHT HOURS A DAY FOR A
2 LIFETIME.

3 Q. YOU ARE REFERRING TO THE SECOND ENTRY
4 THERE THAT MEASURED 25.1?

5 A. CORRECT.

6 Q. AND ONCE AGAIN, YOU RECOMMENDED TO THE
7 MANAGEMENT THERE THAT AS A RESULT OF THAT STUDY,
8 THAT THEY TAKE SOME MEASURES TO MODIFY BAGGING
9 EXHAUST HOODS IN ORDER TO LOWER THOSE LEVELS?

10 A. YES.

11 Q. WAS YOUR OPINION AT THE TIME THAT THOSE
12 LEVELS, ANY LEVEL THAT YOU FELT WAS BORDERLINE OR
13 ABOVE, COULD BE ADEQUATELY CONTROLLED IF THE
14 MANAGEMENT INSTITUTED THE DUST COLLECTION
15 RECOMMENDATIONS THAT YOU INDICATED?

16 MR. RILEY: OBJECT TO THE FORM OF THE
17 QUESTION.

18 THE WITNESS: ANY CONCENTRATION --

19 MR. BURGI: I'LL JOIN.

20 THE WITNESS: -- CAN BE CONTROLLED WITH
21 SUFFICIENT CONTROL TECHNIQUES, SUFFICIENT CONTROL
22 MEASURES.

23 MR. HARRINGTON:

24 Q. LET ME REPHRASE THAT QUESTION TO SATISFY
25 THESE OBJECTIONS.

26 HOW COULD THOSE DUST LEVELS, THOSE THAT WE'VE
27 DISCUSSED, THE 40.5 AND THE 25.1 FROM EXHIBIT NUMBER
28 FOURTEEN, BE CONTROLLED?

1 MR. BURGI: I'LL OBJECT. CALLS FOR
2 SPECULATION. INCOMPLETE HYPOTHETICAL, IF IT IS IN
3 FACT A HYPOTHETICAL.

4 MR. HARRINGTON: I'M ASKING HIM FOR HIS
5 KNOWLEDGE IN THAT AREA.

6 MR. BURGI: SAME OBJECTION.

7 THE WITNESS: WITH IMPROVED EXHAUST
8 VENTILATION THOSE LEVELS COULD BE LOWERED.

9 MR. HARRINGTON:

10 Q. AND THAT'S WHAT YOU TOLD ALGOMA TO DO;
11 CORRECT?

12 A. THAT'S WHAT IT SAYS HERE.

13 MR. HARRINGTON: OKAY. I DON'T HAVE ANY
14 FURTHER QUESTIONS AT THIS TIME. THANK YOU, SIR.

15 MR. BURGI: I HAVE A FEW QUESTIONS FOR YOU.
16 I'M KIND OF PICKING UP LOOSE ENDS, SO I MIGHT LACK A
17 LITTLE BIT OF CONTINUITY, BUT I'LL DO MY BEST.

18

19 EXAMINATION

20 BY MR. BURGI:

21 Q. YOU MENTIONED THAT TO THE BEST OF YOUR
22 RECOLLECTION THE THREE WEEK CONFERENCE THAT YOU WENT
23 TO BEFORE STARTING YOUR ACTIVE DUTIES WITH WISCONSIN
24 PUBLIC HEALTH, DURING THAT PROGRAM YOU DON'T RECALL
25 THE DISCUSSION OF ASBESTOS EXPOSURE OR ASBESTOSIS;
26 IS THAT CORRECT?

27 A. I CAN'T BE SURE.

28 Q. WHEN IS THE FIRST OCCASION YOU BECAME

1 AWARE THAT EXPOSURE TO ASBESTOS POSED A POTENTIAL
2 HEALTH HAZARD?

3 MR. RILEY: OBJECT TO THE FORM OF THE
4 QUESTION, UNLESS YOU FRAME IT IN TERMS OF DOSAGE.
5 THAT'S OVERLY BROAD.

6 THE WITNESS: THAT'S TOO LONG AGO FOR ME TO
7 REMEMBER EXACTLY WHAT HAPPENED.

8 MR. BURGI:

9 Q. SO YOU DO NOT RECALL THE FIRST OCCASION
10 THAT YOU HEARD THAT EXPOSURE TO ASBESTOS COULD POSE
11 A POTENTIAL HELTH HAZARD?

12 MR. RILEY: AT ANY LEVEL? THAT'S THE BASIS
13 FOR MY OBJECTION.

14 MR. BURGI: AT ANY LEVEL. YOU CAN'T QUALIFY
15 IT WITH RESPECT TO THE LEVEL, IT'S UP TO HIM.

16 MR. RILEY: NOT IF THE QUESTION IS IMPROPER
17 IT ISN'T.

18 THE WITNESS: I WOULD LIKE TO SAY --

19 MR. RILEY: HE DOESN'T HAVE AN OBLIGATION TO
20 MAKE YOUR QUESTION A FAIR ONE BY ADDING INFORMATION
21 WHICH YOU INTENTIONALLY LEFT OUT.

22 THE WITNESS: WITH 99 PERCENT CERTAINTY WE
23 LEARNED OF IT AT THAT CONFERENCE, BECAUSE WE WERE
24 HANDED OUT INFORMATION ON ALL THE KNOWN TOXIC
25 MATERIALS, AND WE WERE GIVEN A BOOK THAT THE PUBLIC
26 HEALTH SERVICE HAD PUBLISHED THAT HAD JUST ABOUT
27 EVERYTHING KNOWN ABOUT INDUSTRIAL HYGIENE IN IT.
28 AND I'M AGAIN, 99 PERCENT CERTAIN THAT ASBESTOSIS

1 WAS KNOWN BEFORE 1937.

2 IF I COULD REVIEW THE LITERATURE I COULD FIND
3 OUT WHEN IT WAS FIRST PUBLISHED, AND I'M SURE IT WAS
4 BEFORE 1937.

5 MR. BURGI:

6 Q. I'M JUST ASKING FOR YOUR INDEPENDENT
7 RECOLLECTION AS YOU SIT HERE TODAY.

8 A. I DON'T RECALL IT SPECIFICALLY.

9 Q. ALL RIGHT.

10 MR. HARRINGTON: EXCUSE ME. I JUST WANT TO
11 CLARIFY THE RECORD THAT THE CONFERENCE YOU REFERRED
12 TO WAS THE ONE IN WASHINGTON IN 1937?

13 THE WITNESS: YES.

14 MR. BURGI: ABSOLUTELY.

15 THE WITNESS: MAY AND JUNE OF 1937.

16 MR. BURGI:

17 Q. WHAT WAS THE FIRST OCCASION YOU HEARD
18 THE TERM ASBESTOSIS?

19 A. THE SAME ANSWER AS I JUST GAVE YOU. I
20 CAN'T REMEMBER, BUT A LONG TIME AGO. WELL BEFORE
21 1948 OR '49.

22 Q. DID YOU AT ANY TIME DURING YOUR EMPLOY
23 WITH THE WISCONSIN PUBLIC HEALTH BECOME AWARE OF ANY
24 OTHER DISEASES ASSOCIATED WITH ASBESTOS EXPOSURE?

25 A. I DIDN'T UNDERSTAND THE LAST PART OF THE
26 QUESTION.

27 MR. BURGI: WOULD YOU READ THAT BACK?

28 / / /

1 (RECORD READ.)

2

3 MR. RILEY: SAME OBJECTION AS BEFORE.

4 ARE YOU REFERRING TO AT ANY LEVEL?

5 MR. BURGI: ANY LEVEL.

6 MR. RILEY: OKAY.

7 THE WITNESS: I'LL HAVE TO ASK A QUESTION.

8 YOU SAY ANY OTHER DISEASES?

9 MR. BURGI:

10 Q. OTHER THAN THAT THAT WE'VE USED COMMONLY
11 AS THE TERM ASBESTOSIS.

12 A. NO.

13 Q. DID YOU AT ANY TIME WHILE EMPLOYED BY
14 THE WISCONSIN PUBLIC HEALTH BECOME AWARE THAT
15 ASBESTOS EXPOSURE MAY LEAD TO CANCER?

16 MR. RILEY: OBJECTION. THAT'S ASKED AND
17 ANSWERED.

18 YOU JUST ASKED HIM IF HE HEARD OF ANY OTHER
19 DISEASE AND HE TOLD YOU NO.

20 MR. BURGI: I'M ASKING SPECIFICALLY ABOUT
21 CANCER.

22 THE WITNESS: THE ANSWER IS NO.

23 MR. RILEY: DO YOU MEAN TO EXCLUDE CANCER
24 FROM THE PRIOR QUESTION?

25 MR. HARRINGTON: I DON'T UNDERSTAND HOW.
26 THAT'S NOT APPLICABLE.

27 MR. BURGI: HE MAY RESPOND. THE OBJECTION
28 IS ON THE RECORD.

1 MR. RILEY: I OBJECT.

2 THE WITNESS: ASBESTOSIS WAS THE ONLY THING
3 WE KNEW IN CONNECTION -- THE ONLY DISEASE WE KNEW IN
4 CONNECTION WITH ASBESTOS.

5 MR. BURGI:

6 Q. ALL RIGHT. DID YOU AT ANY TIME WHILE
7 EMPLOYED BY WISCONSIN PUBLIC HEALTH HEAR THE TERM
8 MESOTHELIOMA?

9 MR. RILEY: SAME OBJECTION.

10 THE WITNESS: I DON'T KNOW WHEN I LEARNED
11 VARIOUS THINGS, AND YOU ARE GOING BACK AN AWFUL LONG
12 WAYS FOR A PERSON TO REMEMBER.

13 MR. BURGI:

14 Q. SO YOU HAVE NO SPECIFIC RECOLLECTION?

15 A. I HAVE NO SPECIFIC RECOLLECTION WHEN I
16 FIRST HEARD THAT.

17 Q. YOU MENTIONED ONE OF THE PEOPLE AT THIS
18 CONFERENCE IN WASHINGTON D.C. WAS DR. SAYERS; IS
19 THAT CORRECT?

20 A. YES.

21 Q. AND YOU MENTIONED THAT IN YOUR OPINION
22 HE WAS AN AUTHORITY ON THE ISSUE OF ASBESTOS
23 EXPOSURE?

24 MR. RILEY: OBJECT TO THE FORM OF THE
25 QUESTION. YOU CAN ASK HIM IF HE THOUGHT HE WAS, BUT
26 I DON'T THINK HE STATED THAT BEFORE. I THINK HE
27 SAID HE WAS A SURGEON.

28 MR. BURGI: OKAY. I'LL REPHRASE THE

1 QUESTION.

2 Q. WAS IT YOUR OPINION THAT DR. SAYERS WAS
3 AN AUTHORITY ON THE ISSUE OF EXPOSURE TO TOXIC
4 SUBSTANCES, INCLUDING ASBESTOS?

5 MR. RILEY: AS OF 1937?

6 MR. BURGI: AS OF THE DATE OF THE
7 CONFERENCE.

8 MR. RILEY: THANK YOU.

9 THE WITNESS: I CAN'T SAY THAT DR. SAYERS
10 HIMSELF WAS AN AUTHORITY.

11 HE WAS THE HEAD OF THE ORGANIZATION, BUT HE
12 HAD WITH HIM DOCTORS AND OTHER SCIENTISTS WHO WERE
13 VERY DEFINITELY AUTHORITIES ON THESE INDUSTRIAL
14 EXPOSURES, INDUSTRIAL -- POTENTIAL INDUSTRIAL
15 HAZARDS. SO SOMEBODY IN HIS GROUP WAS ONE OF THE --
16 WOULD HAVE BEEN CONSIDERED ONE OF THE LEADING
17 AUTHORITIES AT THE TIME.

18 MR. BURGI:

19 Q. SO, WERE YOU OF THE OPINION AT THE TIME
20 OF THIS CONFERENCE THAT ANY DOCUMENT OR PUBLICATION
21 UNDER DR. SAYERS' NAME WOULD BE AUTHORITATIVE ON THE
22 ISSUE OF ASBESTOS EXPOSURE.

23 MR. RILEY: EXCUSE ME. I THOUGHT HE JUST
24 SAID HE COULDN'T SAY THAT WITH RESPECT TO
25 DR. SAYERS.

26 MR. BURGI:

27 Q. I SAID PUBLISHED UNDER THE NAME OF
28 DR. SAYERS.

1 A. THAT'S A VERY STRANGE QUESTION.

2 Q. LET ME REPHRASE IT.

3 YOU JUST MENTIONED THAT DR. SAYERS HAD AT HIS
4 DISPOSAL A NUMBER OF EXPERTS; IS THAT CORRECT?

5 A. YES.

6 Q. AND WERE YOU OF THE OPINION AT THE TIME
7 OF THIS CONFERENCE THEN THAT ANY PUBLICATION WHICH
8 WAS PRINTED OR AUTHORED BY DR. SAYERS WOULD BE
9 AUTHORITATIVE ON THE ISSUE OF ASBESTOS EXPOSURE?

10 A. DEPENDS ON WHAT YOU MEAN BY
11 "AUTHORITATIVE."

12 BY AUTHORITATIVE, IF YOU MEAN BY AUTHORITATIVE
13 WOULD IT HAVE THE FORCE OF LAW OR SOMETHING LIKE
14 THAT, NO. AND THE PEOPLE -- NO. THAT'S IT. IT
15 WOULD VERY DEFINITELY BE RESPECTED BY PEOPLE IN THE
16 PROFESSION.

17 Q. WOULD IT ALSO BE RESPECTED BY YOU?

18 A. NOT NECESSARILY BELIEVED BY EVERY ONE OF
19 THEM.

20 Q. WOULD IT ALSO BE RESPECTED BY YOURSELF?

21 A. I CAN'T ANSWER THAT QUESTION. THAT'S
22 OUT OF CONTEXT.

23 ALONG WITH EVERYTHING ELSE THAT WAS AVAILABLE
24 IT PROBABLY WOULD BE. BUT IF IT HAD A DIVERSED
25 OPINION WHICH HAD JUST BEEN BROUGHT OUT SAY AS A
26 RESULT OF SOME BASIC STUDY ON TOXICOLOGY, HE HAD A
27 RIGHT TO HIS OPINION, HIS PEOPLE.

28 BUT THERE WOULD BE OTHER AUTHORITIES WHO MIGHT

1 ALSO HAVE OPINIONS.

2 I'M NOT SAYING THAT EVERYTHING THAT DR. SAYERS
3 PUT HIS NAME ON WAS THE GOSPEL TRUTH AT THE TIME.
4 IT WAS SOME DATA THAT WE'D ALL READ AND ^{RESPECTED} RESPECTED
5 VERY HIGHLY. *original spelling
o.p. (u)*

6 Q. DID YOU READ DR. SAYERS' PUBLICATION
7 ENTITLED "ASBESTOSIS," WHICH IS PRINTED IN THE
8 AMERICAN JOURNAL OF PUBLIC HEALTH, 1939?

9 A. I CAN'T RECALL THAT SPECIFICALLY.

10 Q. DO YOU KNOW IF THAT WAS A JOURNAL OR
11 PUBLICATION THAT WOULD HAVE BEEN CONTAINED IN YOUR
12 LIBRARY AS YOU PREVIOUSLY DESCRIBED?

13 MR. RILEY: I'M SORRY. COULD YOU TELL ME
14 WHAT JOURNAL IT WAS?

15 THE WITNESS: VERY LIKELY. BUT I CAN'T SAY
16 IT WAS.

17 MR. BURGI:

18 Q. "AMERICAN JOURNAL OF PUBLIC HEALTH." IT
19 WAS CO-AUTHORED BY A DOCTOR DREESON.

20 A. I CAN'T REMEMBER THE SPECIFIC ONE.

21 Q. JUST WITH RESPECT TO YOUR OVERALL
22 KNOWLEDGE OF EXPOSURE TO ASBESTOS, DID YOU ATTEND
23 ANY SEMINARS OR EDUCATIONAL COURSES WHILE IN THE
24 MILITARY ON THE ISSUE OF EXPOSURE TO ASBESTOS?

25 A. NO. NOTHING RELATED TO ASBESTOS ALONE.

26 Q. CAN YOU THINK OF ANY SEMINARS OR COURSES
27 WHICH YOU ATTENDED AT ANY TIME IN WHICH THE ISSUE OF
28 EXPOSURE TO ASBESTOS WAS INCLUDED AS PART OF THE

1 SUBJECT MATTER?

2 A. I ATTENDED MEETINGS OF THE AMERICAN
3 INDUSTRIAL HYGIENE ASSOCIATION, THE AMERICAN
4 CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENIST.
5 I USE THE TERMS TOGETHER, BECAUSE FOR MANY YEARS
6 THEY HAD ANNUAL MEETINGS TOGETHER FOR ALMOST EVERY
7 YEAR FROM THE TIME OF '37 UNTIL I RETIRED IN '71.

8 AND WHILE I WAS IN THE SERVICE AT ONE OF THOSE
9 MEETINGS A -- THERE WAS A NAVY MAN THAT PRESENTED A
10 PAPER ON ASBESTOS AND SOMETHING THAT HAD TO DO WITH
11 SHIP BUILDING. I RECALL THAT BECAUSE I HAD BEEN
12 WITH THE NAVY, AND SO I WOULD THEREFORE BE
13 INTERESTED IN SOMETHING A NAVY MAN HAD TO SAY.

14 I DON'T KNOW, I CAN'T TELL YOU WHAT THE
15 CONCLUSIONS WERE OR ANYTHING ELSE. IT WAS ONE OF
16 THE MANY, MANY PAPERS THAT LITERALLY -- ONE OF THE
17 THOUSANDS OF PAPERS THAT I HAVE HEARD PRESENTED AT
18 THESE MEETINGS OVER A PERIOD OF, YOU KNOW, HOWEVER
19 MANY YEARS FROM '37 TO '71.

20 BUT THERE WAS SOMETHING ABOUT ASBESTOS SOME
21 TIME IN MY MILITARY CAREER. PROBABLY IN THE '40'S
22 OR PROBABLY IN THE '50'S. I DON'T KNOW. I DON'T
23 KNOW WHEN.

24 Q. DID YOU AT ANY TIME AS A RESULT OF
25 ATTENDING ANY OF THESE CONFERENCES OR THROUGH YOUR
26 OWN INDEPENDENT STUDIES BECOME AWARE OF A WISCONSIN
27 DEPARTMENT OF PUBLIC HEALTH MEETING OF 1932 WHICH
28 WAS PUBLISHED AND WHICH A CASE STUDY OF ASBESTOSIS

1 IN A WORKER WAS DISCUSSED WHERE THE WORKER HAD ONLY
2 SIX YEARS OF WORK EXPOSURE?

3 A. DID YOU SAY WISCONSIN? WISCONSIN PUBLIC
4 HEALTH?

5 Q. YES.

6 MR. RILEY: THE QUESTION IS WERE YOU AWARE
7 OF ANY SUCH PUBLICATION THAT HE JUST DESCRIBED.

8 THE WITNESS: BUT I THOUGHT HE MAY HAVE MADE
9 A MISTAKE AND SAID PUBLIC HEALTH.

10 MR. RILEY: NO.

11 THE WITNESS: PLEASE REPEAT THAT.

12 MR. BURGI:

13 Q. OKAY. I'M ASKING WHETHER OR NOT YOU AT
14 ANY TIME BECAME AWARE OF A WISCONSIN DEPARTMENT OF
15 PUBLIC HEALTH MEETING OF 1932 WHICH WAS LATER
16 PUBLISHED IN WHICH A CASE STUDY OF ASBESTOSIS IN A
17 WORKER WHO WAS EXPOSED FOR ONLY SIX YEARS WAS
18 DISCUSSED AT THE CONFERENCE AND LATER PUBLISHED?

19 IT WAS ALSO REPORTED TO THE WORKERS
20 COMPENSATION BOARD.

21 A. I'M NOT FAMILIAR WITH THAT CASE, NO.
22 THERE ARE MANY PUBLISHED CASES OF ASBESTOSIS. NOT
23 MANY, BUT THERE WERE SOME PUBLISHED CASES.

24 I SAW STATISTICS IN THE PAST THAT WERE GATHERED
25 ON ALL OCCUPATIONAL DISEASES. A FEW STATES WERE
26 ABLE TO COLLECT THOSE AND SUBMIT THEM THROUGH THE
27 U.S. PUBLIC HEALTH SERVICE, AND THOSE WOULD BE SENT
28 TO US SO WE COULD GET SOME IDEA OF WHAT DISEASES

1 WERE IMPORTANT.

2 AND OCCASIONALLY, ASBESTOSIS WAS MENTIONED IN
3 THOSE REPORTS OF OCCUPATIONAL DISEASES, ALONG WITH
4 MANY, MANY OTHER SUBSTANCES.

5 Q. DO YOU HAVE ANY RECOLLECTION OF ANY SUCH
6 REPORTS IN WHICH THE WORK EXPOSURE WAS SIX YEARS?

7 A. I WOULDN'T REMEMBER THE EXPOSURE TIME.

8 Q. JUST FOR THE SAKE OF MY OWN
9 CLARIFICATION IS THERE ANY DIFFERENCE IN THE DUTIES
10 AND RESPONSIBILITIES OF A BIO-ENVIRONMENTAL ENGINEER
11 AS OPPOSED TO AN INDUSTRIAL HYGIENIST, AS YOU
12 UNDERSTAND IT?

13 A. IT WENT A LITTLE BIT FARTHER.

14 Q. IN WHAT DIRECTION?

15 A. IN THE DIRECTION THAT IT, IT PUT MORE
16 EMPHASIS ON OTHER EXPOSURE FACTORS, SUCH AS NUCLEAR
17 RADIATION, NOISE LEVELS, SPECIFIC TOXIC HAZARDS THAT
18 YOU DON'T RUN INTO IN INDUSTRIAL HYGIENE, AIR
19 POLLUTION -- THESE ARE ALL PART OF THE WORK OF AN
20 INDUSTRIAL HYGIENIST UP TO A CERTAIN POINT. BUT
21 MOST INDUSTRIAL HYGIENISTS LIMIT THEMSELVES TO THE
22 EXPOSURES AS WE FIND IN THE AVERAGE FACTORY. WE
23 JUST WENT A LITTLE BIT FARTHER.

24 Q. IF I UNDERSTAND CORRECTLY, YOU RECALL
25 ONLY TWO FACILITIES AT WHICH YOU DID TESTING
26 SPECIFICALLY FOR ASBESTOS EXPOSURE; IS THAT CORRECT?

27 A. THAT'S RIGHT. AND I DON'T EVEN REMEMBER
28 THE NAME OF ONE, BUT I KNOW THAT I DID BECAUSE IT

1 WAS A DIFFERENT MANUFACTURING PROCESS.

2 Q. DO YOU KNOW WHAT TOWN IT WAS LOCATED IN?

3 A. NO.

4 Q. DO YOU KNOW HOW MANY OCCASIONS YOU
5 VISITED THAT OTHER FACILITY?

6 A. PROBABLY JUST ONCE. I DON'T, I DON'T
7 REMEMBER.

8 Q. NOW YOU MENTIONED IN PREVIOUS TESTIMONY
9 THAT THE -- I KEEP CALLING IT T.L.V. -- WHAT'S THE
10 EXPRESSION YOU USE?

11 MR. RILEY: M.A.C.

12 MR. BURGI: THE M.A.C.

13 Q. YOU MENTIONED THAT FACTORED INTO THE
14 M.A.C. WAS A SAFETY FACTOR OR SAFETY LEVEL.

15 COULD YOU ELABORATE ON THAT FOR ME?

16 A. THAT'S VERY DIFFICULT TO HAVE TO EXPLAIN
17 BECAUSE I'M NOT IN THE BUSINESS OF TOXICOLOGY,
18 MYSELF. IN OTHER WORDS, THE STUDY OF THE TOXIC
19 EFFECT.

20 BUT WHAT IT AMOUNTS TO IS THAT MANY OF THESE
21 M.A.C.'S ARE DETERMINED ON THE BASIS OF VERY
22 EXTENSIVE STUDIES OF EXPOSURE OF PEOPLE TO A
23 SUBSTANCE. THERE ARE VARIOUS WAYS OF DETERMINING
24 THE LEVELS. ONE IS BY ANIMAL EXPERIMENTATION. THAT
25 IS A VERY POOR ONE. ONE IS BY ACTUALLY SUBJECTING
26 HUMAN VOLUNTEERS TO THE TOXIC MATERIAL. THAT ISN'T
27 A VERY GOOD ONE.

28 THE MOST USED METHOD OF DETERMINING M.A.C. IS

1 TO STUDY AN INDUSTRY WHERE PEOPLE HAVE BEEN EXPOSED
2 TO A SUBSTANCE FOR A LONG PERIOD OF TIME AND WHERE
3 YOU CAN GET A REASONABLY ACCURATE DETERMINATION OF
4 HOW MANY HOURS A DAY THEY'VE BEEN EXPOSED TO WHAT
5 LEVELS, THEN MAKING A MEDICAL DETERMINATION OF
6 WHETHER THERE'S BEEN ANY DAMAGE DONE TO THESE PEOPLE
7 -- FIRST OF ALL, KEEPING RECORDS OF WHETHER ANY
8 OCCUPATIONAL DISEASES OCCURRED; AND SECONDLY, X-RAY
9 EXAMINATIONS, ET CETERA, ET CETERA.

10 AND THEN BASED ON THE FACT THAT YOU STUDIED
11 20,000 PEOPLE IN A CERTAIN INDUSTRY AND THE EXPOSURE
12 HAS BEEN THIS, THESE PEOPLE HAVE BEEN EXPOSED TO
13 THAT LEVEL, THESE PEOPLE HAVE BEEN EXPOSED TO THAT
14 LEVEL, THESE TO THAT LEVEL, YOU COME UP WITH A LEVEL
15 THAT IS SAFE; AND THEN YOU MULTIPLY IT BY THREE OR
16 FOUR OR FIVE OR WHATEVER, DEPENDING ON HOW ACCURATE
17 YOU THINK YOUR M.A.C.'S MIGHT BE. YOU GIVE IT SOME
18 SORT OF A SAFETY FACTOR, AND DON'T -- I DON'T KNOW
19 EXACTLY WHAT THAT WOULD BE. BUT THE LEVELS THAT ARE
20 PUBLISHED ARE CONSIDERED TO BE WELL ON THE SAFE
21 SIDE, THEY ARE ONLY A GUIDELINE THAT IS CONSIDERED
22 TO BE WELL ON THE SAFE SIDE.

23 SO MANY PEOPLE THINK THAT IF YOU EXCEED A
24 LEVEL OF WE'LL SAY A CERTAIN PERCENTAGE IN THE AIR
25 OF CHLORINE GAS, WHEN YOU GET ABOVE THAT EVERYBODY
26 DIES AND IF YOU STAY BELOW THAT -- WELL, THAT IS NOT
27 TRUE. THERE ARE ALL SORTS OF SHADES OF MEANING.

28 ALL IT IS IS THAT THE T.L.V. OR M.A.C., IT'S

1 ASSUMED THAT BASED ON A LOT OF DATA THAT ALMOST ALL
2 OF THE WORKERS WILL BE PROTECTED. THERE'S NO SUCH
3 THING AS SAYING THAT EVERY WORKER WILL BE PROTECTED
4 AGAINST SOMETHING ALL THE TIME. BUT THE T.L.V. OR
5 M.A.C.'S ARE ON THE SAFE SIDE -- ON THE SAFE SIDE.

6 Q. NOW IF I UNDERSTAND CORRECTLY, THE
7 5.0 MILLION PARTS PER CUBIC INCH OF ASBESTOS IS THE
8 M.A.C. AS YOU UNDERSTOOD IT WHEN YOU STARTED WITH
9 THE WISCONSIN DEPARTMENT OF PUBLIC HEALTH?

10 A. YES.

11 Q. AND --

12 MR. RILEY: JUST FOR CLARITY, YOU KEEP
13 REFERRING TO IT AS THE DEPARTMENT OF PUBLIC HEALTH,
14 AND IT'S THE STATE BOARD OF HEALTH. YOU MIGHT
15 CONFUSE IT WITH THE U.S. DEPARTMENT OF PUBLIC
16 HEALTH.

17 MR. BURGI:

18 Q. DO YOU UNDERSTAND THAT I'M REFERRING TO
19 THE STATE BOARD OF HEALTH WHEN I USE THE PHRASE
20 WISCONSIN; IS THAT CORRECT?

21 A. I'VE LOST THE QUESTION.

22 Q. IN THE QUESTIONS WHICH I'VE BEGUN THE
23 DESCRIPTION OF THE ENTITY YOU WORK FOR WITH THE TERM
24 "WISCONSIN," YOU UNDERSTOOD THAT WAS REFERRING TO
25 THE WISCONSIN STATE BOARD OF HEALTH; IS THAT
26 CORRECT?

27 A. YES.

28 Q. NOW DURING YOUR EMPLOY WITH THE

1 WISCONSIN STATE BOARD OF HEALTH DID THE 5.0 MILLION
2 PARTS PER CUBIC INCH M.A.C. EVER CHANGE?

3 A. THAT'S 5.0 MILLION PARTICLES PER CUBIC
4 FOOT.

5 Q. THAT'S RIGHT. PER CUBIC FOOT. I SAID
6 INCH. MY APOLOGY.

7 A. THAT WAS THE RECOGNIZED LEVEL ALL THE
8 TIME I WAS WITH THEM.

9 Q. SO WHEN YOU LEFT IN '49 IT WAS STILL
10 5.0 MILLION PARTS PER CUBIC FOOT?

11 A. YES.

12 Q. SO IT'S YOUR UNDERSTANDING THAT THE
13 5.0 MILLION PARTS PER CUBIC INCH M.A.C. WHICH WAS
14 IN EFFECT AND WHICH YOU RELIED UPON WHILE YOU WERE A
15 MEMBER OF THE WISCONSIN STATE BOARD OF HEALTH HAD
16 FACTORED INTO IT A SAFETY LEVEL OR SAFETY FACTOR OF
17 THE KIND THAT YOU JUST PREVIOUSLY DESCRIBED?

18 A. YES.

19 Q. CAN YOU REFER ME TO ANY LITERATURE OR
20 PUBLICATION WHICH SUPPORTS THAT BELIEF OF YOURS,
21 THAT THERE WAS IN FACT A SAFETY LEVEL OR SAFETY
22 FACTOR CALCULATED INTO THAT 5.0 MILLION PARTS PER
23 CUBIC FOOT?

24 A. I WOULD THINK THAT THE PUBLISHED VALUES
25 OF -- IT'S NOW CALLED T.L.V.'S, M.A.C.'S, PUT OUT BY
26 THE CONFERENCE OF GOVERNMENTAL INDUSTRIAL
27 HYGIENISTS, HAS A DESCRIPTION OF THEIR APPROACH TO
28 THE ESTABLISHMENT OF THESE LEVELS. THERE ARE MANY

1 OTHER FACTORS THAT ARE CONSIDERED. YOU COULD TALK
2 ABOUT M.A.C.'S OR T.L.V.'S FOR HALF AN HOUR AND NOT
3 UNDERSTAND EVERYTHING THAT GOES INTO IT.

4 Q. I'M MAINLY FOCUSING, THOUGH, ON YOUR
5 BELIEF THAT THERE WAS A SAFETY FACTOR IN THIS
6 M.A.C., AND I'M TRYING TO FIND OUT WHERE YOU CAME
7 ABOUT THAT BELIEF, WHAT WAS THE SOURCE?

8 A. FROM EVERYTHING THAT WE LEARNED ALL THE
9 TIME WE WERE IN THE BUSINESS. THERE WERE LOTS OF
10 SOURCES. YOU READ THE STUDIES THAT PEOPLE MADE, YOU
11 LEARNED -- YOU LISTENED TO WHY THEY ESTABLISHED
12 THESE LEVELS. I CAN'T REFER YOU TO ANY SPECIFIC
13 PUBLICATION.

14 Q. WELL, IT'S YOUR UNDERSTANDING THAT THE
15 5.0 MILLION PARTICLES PER CUBIC FOOT WAS
16 ESTABLISHED BY THE A.C.G.I.H.; IS THAT CORRECT.

17 MR. RILEY: WHAT? I'M --

18 THE WITNESS: NOT NECESSARILY.

19 MR. RILEY: I'M NOT SURE THAT'S WHAT HE SAID
20 EARLIER TODAY.

21 MR. BURGI: I'LL MOVE TO STRIKE THAT
22 QUESTION.

23 MR. RILEY: IF YOU MEAN TO EXCLUDE ANY OTHER
24 SOURCES ALSO RECOGNIZING IT, BECAUSE I THINK THAT'S
25 WHAT HE SAID EARLIER -- INCLUDING THE A.C.G.I.H., BUT
26 NOT EXCLUDING ANY OTHER SOURCE --

27 MR. HARRINGTON: HAVE YOU WITHDRAWN THE
28 QUESTION NOW?

1 MR. BURGI: YES. I HAVE WITHDRAWN THE
2 QUESTION.

3 Q. WOULD IT BE CORRECT TO SAY THAT THE
4 SOURCE OF THE 5.0 MILLION PARTS PER CUBIC FOOT AS A
5 STANDARD FOR ASBESTOS EXPOSURE USED BY YOUR
6 DEPARTMENT WAS THE RESULT OF A NUMBER OF
7 PUBLICATIONS INCLUDING THE A.C.G.I.H.?

8 A. THE A.C.G.I.H. SIMPLY COLLATED THE DATA.
9 THEY SIMPLY GOT ALL OF THE INFORMATION THAT WAS
10 AVAILABLE AND MADE A DECISION AS TO WHAT WAS THE
11 MOST REASONABLE NUMBER.

12 Q. DO YOU KNOW --

13 A. THERE WERE PROBABLY MANY PROPOSED BY
14 MANY PEOPLE, AND THIS GROUP JUST EVALUATED THE DATA
15 AND CAME UP WITH A REASONABLE CONCLUSION.

16 Q. DO YOU KNOW OF ANY A.C.G.I.H.
17 PUBLICATION WHICH SPECIFICALLY STATES THAT
18 5.0 MILLION PARTS PER CUBIC INCH, WHICH IS THE
19 M.A.C., AT ANY TIME --

20 A. AGAIN, YOU USED "PER CUBIC INCH."

21 Q. I'M SORRY.

22 A. PER CUBIC FOOT.

23 Q. PER CUBIC FOOT.

24 A. AND THE PUBLICATIONS ARE PUT OUT EACH
25 YEAR, THEY PUBLISH THE DATA EVERY YEAR, I THINK.
26 THEY MAY HAVE MISSED ONE YEAR DURING THE WAR, BUT
27 THEY ROUTINELY PUBLISH THEIR DATA EACH YEAR.

28 Q. AND DO YOU KNOW OF ANY SUCH PUBLICATION

1 IN WHICH IT'S STATED THAT THE M.A.C. HAS FACTORED
2 INTO IT A SAFETY LEVEL OR SAFETY FACTOR?

3 MR. RILEY: IN THOSE EXACT WORDS? ARE YOU
4 TALKING ABOUT ANYTHING THAT INDICATES THAT?

5 I OBJECT TO THE FORM OF THE QUESTION. YOU
6 SHOULD CLARIFY THAT.

7 MR. BURGI:

8 Q. FIRST OF ALL, IN THOSE EXACT WORDS.

9 MR. RILEY: DO YOU REALLY THINK THAT'S A
10 REASONABLE QUESTION?

11 MR. BURGI: YES, I DO.

12 MR. RILEY: OKAY. I OBJECT TO THE FORM OF
13 THE QUESTION.

14 THE WITNESS: I CAN'T TELL YOU OF ANY
15 PUBLICATION. I CAN'T THINK OF ONE NOW.

16 MR. BURGI:

17 Q. CAN YOU REFER ME TO ANY PORTION OF ANY
18 A.C.G.I.H. PUBLICATION WHICH YOU INTERPRET TO MEAN
19 THAT THERE'S A SAFETY FACTOR OR SAFETY LEVEL
20 CALCULATED INTO THE 5.0 MILLION PARTS PER CUBIC FOOT
21 ON ASBESTOS EXPOSURE?

22 A. YOU CAN WRITE TO THE A.C.G.I.H., THEIR
23 EXECUTIVE SECRETARY. THAT'S THE SORT OF QUESTION
24 HE'S SUPPOSED TO ANSWER. I CAN'T TELL YOU.

25 Q. OKAY. NOW YOU'VE DISCUSSED IN SOME
26 DETAIL THE TIME WEIGHTED EXPOSURE THEORY OF YOURS.

27 CAN YOU REFER ME TO ANY PUBLICATIONS OR
28 LITERATURE THAT YOU RELY UPON FOR YOUR DEFINITION OF

1 THE TIME WEIGHTED UNIT, TIME WEIGHTED EXPOSURE?

2 A. AGAIN, THE PUBLICATION OF THE A.C.G.I.H.
3 COMMITTEE ON THRESHOLD LIMIT VALUES.

4 Q. AND IT'S YOUR UNDERSTANDING THAT IN
5 THEIR PUBLICATION THEY SPECIFICALLY DISCUSS TIME
6 WEIGHTED UNITS?

7 A. YES.

8 MR. RILEY: DO YOU MEAN TO SAY TIME WEIGHTED
9 UNITS OPPOSED TO TIME WEIGHTED AVERAGE? THIS MAN
10 USED TIME WEIGHTED AVERAGE AND YOU ARE USING A
11 DIFFERENT TERM.

12 MR. BURGI: ABSOLUTELY.

13 Q. TIME WEIGHTED AVERAGE.

14 A. IN THE MORE RECENT PUBLICATIONS OF THE
15 PROCEDURES OF THIS COMMITTEE ON THRESHOLD LIMIT
16 VALUES AS IT'S CALLED NOW THEY VERY SPECIFICALLY
17 MENTIONED A T.L.V., AND THEN SOME OTHER DESIGNATIONS
18 THAT MEANS TIME WEIGHTED AVERAGE.

19 Q. OKAY. LET ME BE MORE SPECIFIC, THEN.
20 LET'S GO BACK TO YOUR TIME WITH THE STATE OF
21 WISCONSIN STATE BOARD OF HEALTH.

22 DURING THAT PERIOD OF TIME CAN YOU REFER ME TO
23 ANY PUBLICATIONS OR LITERATURE THAT YOU RELIED UPON
24 FOR YOUR UNDERSTANDING --

25 A. NO.

26 Q. -- OF TIME WEIGHTED AVERAGE?

27 A. I CAN'T.

28 THAT IS A BASIC CONCEPT THOUGH THAT WOULD BE

1 USED BY ANY ENGINEER OR SCIENTIST. IT WOULDN'T EVEN
2 HAD TO HAVE A PUBLICATION. WE'D HAVE COME UP WITH
3 THAT BY OURSELVES.

4 IT'S PRETTY OBVIOUS THAT A CONCENTRATION THAT
5 A PERSON CAN TOLERATE FOR EIGHT HOURS A DAY IS NOT
6 THE CONCEPT THAT ONE CAN TOLERATE MORE THAN THAT FOR
7 ONE MINUTE OR ONE HALF MINUTE OR ONE SECOND, JUST TO
8 USE EXTREMES. AND THAT IS SOMETHING THAT IS JUST
9 BASIC SCIENTIFIC KNOWLEDGE. YOU WOULDN'T HAVE TO
10 ASK ANYBODY.

11 Q. THERE'S NO SPECIFIC AUTHORITY YOU CAN
12 GIVE ME THAT YOU RELY UPON FOR THAT UNDERSTANDING?

13 MR. RILEY: OTHER THAN WHAT HE JUST SAID?

14 THE WITNESS: I'M AS MUCH OF AN AUTHORITY ON
15 THAT AS ANYBODY IS. I WAS PART OF THE GROUP THAT
16 MADE THESE DECISIONS.

17 MR. BURGI:

18 Q. OKAY.

19 A. AND IT'S A VALID ASSUMPTION THAT YOU'LL
20 FIND THAT YOU'LL GET FROM ANYBODY IN THE BUSINESS.

21 I CAN'T REFER YOU TO A SPECIFIC PUBLICATION
22 THAT WOULD SPELL THAT OUT IN BLACK AND WHITE.

23 Q. I WANT TO GO BACK TO AGAIN, FOCUSING ON
24 YOUR WORK FOR THE STATE OF WISCONSIN, STATE BOARD OF
25 HEALTH.

26 DURING THAT PERIOD OF TIME WAS IT YOUR
27 UNDERSTANDING THAT THE INCREASE IN HAZARD TO THE
28 WORKER IS DIRECTLY PROPORTIONAL TO THE INCREASE IN

1 HIS EXPOSURE TO ASBESTOS PARTICLES?

2 MR. RILEY: I OBJECT TO THE FORM OF THE
3 QUESTION.

4 THE WITNESS: INCREASED EXPOSURE, IF YOU
5 INCLUDE CONCENTRATION AND TIME, YES.

6 MR. BURGI:

7 Q. SO, FOR EXAMPLE, ONE WHO'S EXPOSED TO
8 SAY TEN MILLION PARTS PER CUBIC FOOT OVER AN EIGHT
9 HOUR DAY --

10 MR. RILEY: OF WHAT?

11 MR. BURGI: OF ASBESTOS.

12 MR. RILEY: PURE?

13 MR. BURGI: WELL, LET'S GO BACK AND ASK
14 THAT.

15 Q. IS IT YOUR UNDERSTANDING THAT THE M.A.C.
16 OF 5.0 MILLION PARTS PER CUBIC FOOT THAT YOU USED AS
17 A SAFETY LEVEL TO DETERMINE WHETHER OR NOT A WORKER
18 WAS BEING EXPOSED TO UNDULY HAZARDOUS QUANTITIES OF
19 ASBESTOS REFERS ONLY TO PURE ASBESTOS?

20 A. THAT REFERS TO THE ASBESTOS CONTENT OF
21 WHATEVER YOU ARE MEASURING. ASBESTOS DOESN'T HAVE
22 TO BE ALL BY ITSELF. IT'S THE ASBESTOS CONTENT OF
23 THE DUST THAT YOU ARE MEASURING IN THE AIR AT THE
24 BREATHING AREA.

25 Q. NOW MY QUESTION IS, TAKING INTO ACCOUNT
26 YOUR DEFINITION OF WHAT IS MEANT BY 5.0 MILLION
27 PARTS PER CUBIC FOOT OF ASBESTOS THAT A WORKER IS
28 EXPOSED TO, WHAT WOULD BE THE PROPORTION OF GREATER

1 HAZARD TO A WORKER WHO'S EXPOSED TO SAY TEN MILLION
2 PARTS PER CUBIC FOOT OVER THE SAME PERIOD OF TIME?

3 A. (NO AUDIBLE RESPONSE).

4 Q. IN OTHER WORDS, DOES THE INCREASED RISK
5 GO DIRECTLY PROPORTIONAL, OR IS THERE SOME KIND OF
6 SLIDING SCALE, IN YOUR OPINION?

7 MR. RILEY: I OBJECT TO THE FORM OF THE
8 QUESTION. I THINK THAT'S VAGUE AND AMBIGUOUS.

9 THE WITNESS: THAT CAN'T BE ANSWERED.
10 THERE'S NO DEFINITE ANSWER TO THAT. THAT WOULD
11 DIFFER WITH EVERY SUBSTANCE YOU ARE TALKING ABOUT.

12 MR. BURGI:

13 Q. I'M REFERRING ONLY TO ASBESTOS.

14 MR. RILEY: SAME OBJECTION.

15 THE WITNESS: I DON'T THINK THAT CAN BE
16 ANSWERED THAT IT'S DIRECTLY PROPORTIONAL. I DON'T
17 THINK SO.

18 MR. BURGI:

19 Q. YOU STATED IN PREVIOUS TESTIMONY, YOU
20 SAID, OBVIOUSLY, IF YOU CAN TOLERATE A SMALL LEVEL
21 OF ASBESTOS OVER A LONG PERIOD THEN YOU CAN TOLERATE
22 A LARGE QUANTITY OVER A SHORT PERIOD.

23 A. RIGHT.

24 Q. IS THAT A CORRECT CHARACTERIZATION?

25 A. YES.

26 MR. RILEY: I'LL OBJECT TO THE
27 CHARACTERIZATION.

28 THE WITNESS: WITHIN LIMITS IT'S CORRECT.

1 MR. BURGI: ALL RIGHT.

2 Q. IS THERE ANY PARTICULAR AUTHORITY THAT
3 YOU RELY UPON WITH RESPECT TO DETERMINING THE
4 PROPORTION TO WHICH SHORT LEVELS CAN BECOME
5 HAZARDOUS AS OPPOSED TO PROLONGED PERIODS?

6 A. AGAIN --

7 MR. RILEY: I OBJECT TO THE FORM OF THE
8 QUESTION.

9 THE WITNESS: AGAIN, I REFER YOU TO THIS
10 COMMITTEE THAT -- NOW, AT LEAST THEY COME UP WITH
11 EVEN SHORT TERM EXPOSURE LEVELS AND MAXIMUM SHORT
12 TERM EXPOSURE LEVELS. EACH MATERIAL IS EVALUATED
13 SEPARATELY AND THEY CAN COME UP WITH A MODIFICATION
14 OF THE BASIC LEVEL.

15 Q. JUST SO I CAN UNDERSTAND THE TIME
16 WEIGHTED AVERAGE, A QUESTION AROSE IN MY MIND WITH
17 RESPECT TO THE LOADING PROCEDURES THAT WERE
18 DISCUSSED AT THE PLANT THAT YOU DID TESTING OF --

19 A. (NODS HEAD.)

20 Q. -- AND YOU MENTIONED THAT THE LOADING
21 PROCEDURE ONLY TOOK ROUGHLY AN HOUR AND A HALF.

22 AND THEREFORE, THE WORKERS COULD BE EXPOSED TO
23 HIGHER LEVELS OF ASBESTOS CONTENT DURING THAT HOUR
24 AND A HALF AS OPPOSED TO A WORKER WHO IS EXPOSED TO
25 LET'S SAY OVER AN EIGHT HOUR PERIOD.

26 MR. RILEY: IS THAT A QUESTION?

27 THE WITNESS: I LOST THE QUESTION SOMEWHERE.

28 / / /

1 MR. BURGI: ALL RIGHT.

2 Q. LET ME GIVE YOU A HYPOTHETICAL.

3 MR. RILEY: I'M GOING TO OBJECT RIGHT NOW TO
4 ANY HYPOTHETICAL.

5 MR. BURGI: ON WHAT GROUNDS, COUNSEL?

6 MR. RILEY: THIS MAN HAS NOT BEEN OFFERED AS
7 AN EXPERT WITNESS.

8 MR. BURGI: THE HYPOTHETICAL IS FOR THE
9 PURPOSE OF MY OBTAINING AN UNDERSTANDING OF HOW HE
10 WROTE THESE REPORTS AND HOW HE CALCULATED THE
11 FIGURES THAT ARE IN THESE REPORTS THAT ARE NOW
12 ADMITTED INTO EVIDENCE AS EXHIBITS 13, 14, 15 AND SO
13 ON, IN WHICH HE HAS TESTIFIED PREVIOUSLY TO THE WAY
14 HE DID STUDIES AT THIS PLANT IN ALGOSA.

15 MR. RILEY: IT'S ALGOMA.

16 MR. BURGI: ALGOMA. EXCUSE ME.

17 MR. RILEY: I DON'T THINK THAT YOUR DESIRE
18 TO UNDERSTAND HIS TESTIMONY PERMITS YOU TO ASK HIM
19 HYPOTHETICAL QUESTIONS. THAT'S NOT MY UNDERSTANDING
20 OF HOW A DEPOSITION OF THIS TYPE OF WITNESS OR ANY
21 TESTIMONY WITH REGARD TO THIS TYPE OF WITNESS IS TO
22 PROCEED.

23 UNDER YOUR THEORY YOU COULD ASK HYPOTHETICAL
24 QUESTIONS OF ANY WITNESS ON THE GROUNDS THAT YOU'D
25 LIKE TO USE IT AS A TOOL. I DON'T THINK THE RULES
26 OF EVIDENCE PERMIT THAT.

27 MR. BURGI: WELL, YOUR OBJECTION IS
28 PRESERVED, AND I WILL ASK THE QUESTION.

1 MR. RILEY: OH, YEAH.

2 MR. HARRINGTON: I'LL JOIN IN THE OBJECTION
3 TO THE FORM OF THE QUESTION.

4 MR. RILEY: I CAN'T STOP YOU, I'LL JUST TRY
5 TO PERSUADE YOU THAT IT'S JUST FLAT WRONG.

6 MR. BURGI:

7 Q. IF ONE OF THESE WORKERS IS PERFORMING
8 THE UNLOADING OF A BOX CAR FOR AN HOUR AND A HALF
9 AND HIS EXPOSURE LEVEL IS 40 PARTS PER CUBIC FOOT,
10 AND THE REMAINDER OF HIS DAY HE'S OCCUPIED BY
11 PERFORMING DUTIES WHICH EXPOSES HIM TO 5.0 PARTS,
12 5.0 MILLION PARTS PER CUBIC FOOT, HOW WOULD YOU GO
13 ABOUT CALCULATING THE AMOUNT OF EXPOSURE HE HAS OVER
14 AN EIGHT HOUR DAY?

15 MR. RILEY: EXCUSE ME A SECOND, OBJECTION.
16 NOT ONLY ON THE GROUNDS IT'S A HYPOTHETICAL
17 QUESTION, BUT IT'S NOT EVEN A GOOD HYPOTHETICAL
18 QUESTION. BECAUSE AMONG OTHER THINGS YOU AREN'T
19 MAKING IT CLEAR WHETHER YOU ARE TALKING ABOUT THE
20 TOTAL DUST, SOME UNDETERMINED PORTION OF WHICH IS
21 ASBESTOS; OR WHETHER YOU ARE TALKING ABOUT ALL
22 ASBESTOS. I THINK THAT IT'S AN UNFAIR HYPOTHETICAL
23 AS WELL AS IMPROPER ON THE BASIS OF BEING
24 HYPOTHETICAL.

25 MR. BURGI: I'M TALKING ABOUT ASBESTOS AS
26 DEFINED BY THE M.A.C., WHICH HE HAS PREVIOUSLY
27 TESTIFIED ABOUT. SO, THAT WOULD BE 5.0 MILLION
28 PARTS PER CUBIC FOOT AS HE HAS DEFINED IT.

1 MR. RILEY: EXCUSE ME. BUT HE HAS
2 IDENTIFIED THE M.A.C. FOR THE ALGOMA DUST AT
3 20 MILLION PARTICLES, AND I'M AFRAID THAT THERE'S A
4 LOT OF POSSIBLE CONFUSION HERE.

5 MR. BURGI: I'M NOT REFERRING TO ALGOMA IN
6 PARTICULAR --

7 MR. RILEY: OKAY.

8 MR. BURGI: -- IN MY HYPOTHETICAL. IT'S
9 ONLY WITH RESPECT TO GETTING INSIGHT INTO HIS
10 UNDERSTANDING OF THE AVAILABLE LITERATURE AND HOW HE
11 CALCULATED EXPOSURE.

12 MR. RILEY: BUT NOT AT ALGOMA?

13 MR. BURGI: IT RELATES TO ALGOMA IN THAT IT
14 WOULD GIVE INSIGHT INTO HOW HE DOES HIS CALCULATIONS
15 IN GENERAL.

16 MR. RILEY: I'M ASKING YOU -- AT LEAST MAKE
17 IT CLEAR WHETHER YOU ARE TALKING ABOUT THE ASBESTOS
18 COMPONENT OF ANY DUST IN THIS HYPOTHETICAL; OR THE
19 TOTAL DUST, ANY ONE PORTION OF WHICH IS ASBESTOS; OR
20 PERHAPS TOTAL DUST, A KNOWN PORTION OF ASBESTOS. I
21 THINK WE'RE GETTING INTO THE PITFALLS OF
22 HYPOTHETICAL HERE IN AN IMPROPER CIRCUMSTANCE. I
23 CAN'T STOP YOU FROM DOING IT.

24 IN ADDITION TO MY OBJECTION THAT YOU ARE DOING
25 IT AT ALL I THINK YOU ARE DOING IT WRONG -- EVEN IF
26 YOU WERE PERMITTED TO ASK THE HYPOTHETICAL.

27 MR. BURGI: WHEN I'M REFERRING TO AN M.A.C.
28 OF ASBESTOS THAT IS ALL I AM REFERRING TO -- NOT ANY

1 COMBINATION OF ANY SUBPARTS OR OTHER SUBSTANCES.

2 MR. RILEY: OKAY.

3 WHAT ABOUT THE HYPOTHETICAL DUST COUNTS? ARE
4 THEY ALL ASBESTOS DUST OR ARE THEY ASBESTOS AND SOME
5 OTHER DUST IN THE AIR?

6 MR. BURGI: I'M REFERRING ONLY TO ASBESTOS
7 DUST COUNTS.

8 IF ONE WORKED AN HOUR AND A HALF UNLOADING A
9 BOX CAR, EXPOSED TO 40 MILLION PARTS PER CUBIC FOOT
10 FOR AN HOUR AND A HALF AND SPENT THE REMAINDER OF
11 THE DAY IN AN ATMOSPHERE OF 5.0 MILLION PARTS PER
12 CUBIC FOOT, HOW WE WE GO ABOUT DETERMINING HIS
13 EXPOSURE OVER AN EIGHT HOUR DAY.

14 MR. RILEY: SAME OBJECTION.

15 GO AHEAD AND ANSWER.

16 THE WITNESS: I WOULD MAKE A CALCULATION
17 BASED ON THE ASBESTOS CONTENT OF THE DUST, BASED ON
18 THE TIME, ON THE COUNT AT EACH LOCATION THAT THE MAN
19 WORKED, AND THE PERCENTAGE OF THE TIME HE WORKED AT
20 EACH LOCATION. THAT WOULD ALL BE CRANKED INTO THE
21 CALCULATIONS.

22 I CAN'T GIVE YOU A SPECIFIC NUMBER NOW. MY
23 MENTAL CALCULATOR ISN'T THAT GOOD.

24 BUT IT WOULD TAKE INTO ACCOUNT THE
25 CONCENTRATION OF ASBESTOS IN THE DUST, THE DUST
26 COUNTS AT EACH LOCATION, AND THE PERCENTAGE OF TIME
27 SPENT AT EACH LOCATION.

28 / / /

1 MR. BURGI:

2 Q. IN PREVIOUS TESTIMONY YOU MENTIONED THAT
3 DURING YOUR TIME WITH THE STATE OF WISCONSIN, STATE
4 BOARD OF HEALTH, YOU WERE NOT AWARE OF RECORDED
5 CASES OF ASBESTOSIS IN WISCONSIN, AND YET A FEW
6 MINUTES AGO YOU DISCUSSED THAT THERE WERE REPORTED
7 CASES OF ASBESTOSIS IN WISCONSIN WHEN I REFERRED YOU
8 TO THE ONE THAT WAS REPORTED TO THE WORKERS'
9 COMPENSATION BOARD.

10 WHAT I'D LIKE TO ASK YOU AT THIS POINT IS
11 DURING YOUR PERIOD WITH THE STATE OF WISCONSIN,
12 STATE BOARD OF HEALTH, WERE YOU AWARE OF ANY CASES
13 OF ASBESTOSIS IN WISCONSIN?

14 MR. RILEY: EXCUSE ME A MOMENT. I OBJECT TO
15 THAT.

16 I DON'T THINK HE SAID ANYTHING LIKE WHAT YOU
17 JUST CHARACTERIZED, AND I THINK THE QUESTION IS
18 UNFAIR.

19 IF YOU WANT TO ASK HIM AGAIN WAS HE AWARE OF
20 ANY RECORDED CASES FROM WISCONSIN AS OPPOSED TO SOME
21 OTHER JURISDICTION WHICH MAY HAVE FOUND -- THE
22 REPORTS MAY HAVE FOUND THEIR WAY INTO WISCONSIN, ASK
23 IT THAT WAY. I DON'T THINK IT'S FAIR TO SUGGEST
24 THAT HE'S --

25 MR. BURGI: I AGREE.

26 Q. ARE YOU AWARE -- EXCUSE ME.

27 WERE YOU AWARE AT ANY TIME WHILE EMPLOYED BY
28 THE STATE OF WISCONSIN, STATE BOARD OF HEALTH, OF

1 ANY REPORTED CASES OF ASBESTOSIS WITHIN THE STATE OF
2 WISCONSIN?

3 A. I DON'T REMEMBER, BUT I'D LIKE TO
4 QUALIFY THAT.

5 THAT WOULD MEAN THAT I'D HAVE TO READ EVERY
6 STATISTICAL REPORT EVER PUT OUT BY ANY, BY ANY
7 AGENCY IN THE STATE, AND ONE OR TWO OR A FEW CASES
8 OF ASBESTOS, ASBESTOSIS, REPORTED BEFORE MY TIME.

9 THERE'S NO REASON WHY I WOULD -- THAT WOULD BE
10 BROUGHT TO MY ATTENTION. I WOULD HAVE NO REASON TO
11 GO BACK THROUGH ALL THE STATISTICS KEPT BY THE STATE
12 OR BY ANYBODY ELSE -- BECAUSE I COULD FIND A CASE OF
13 EVERYTHING THAT'S EVER BEEN RECORDED IF I LOOKED FAR
14 ENOUGH.

15 MR. BURGI: MOVE TO STRIKE AS NONRESPONSIVE.

16 Q. I'M JUST INTERESTED IN WHETHER OR NOT
17 YOU WERE AWARE OF ANY CASES REPORTED IN THE STATE OF
18 WISCONSIN?

19 A. I DON'T REMEMBER.

20 Q. OKAY.

21 CORRECT ME IF I'M WRONG, BUT I UNDERSTOOD FROM
22 YOUR PRIOR TESTIMONY THAT YOU SAID, QUOTE, "WE DID
23 NOT CONSIDER ASBESTOS A SERIOUS HAZARD IN
24 WISCONSIN."

25 A. THAT'S RIGHT. BECAUSE THERE WEREN'T
26 ENOUGH REPORTED CASES, CERTAINLY.

27 Q. NOW, WHEN YOU SAY "WE," WHO WERE YOU
28 INCLUDING OTHER THAN YOURSELF?

1 A. WELL, I MEAN OUR UNIT, THE STATE HEALTH
2 DEPARTMENT, THE SAFETY PEOPLE, THE INDUSTRIAL
3 COMMISSION, ANYONE WHO HAS ANY CONCERN WITH
4 INDUSTRIAL DISEASES.

5 Q. IS THERE ANYTHING UNIQUE ABOUT WISCONSIN
6 THAT LED YOU TO THAT CONCLUSION OF THE INDUSTRIES IN
7 WISCONSIN?

8 A. WHAT WAS THE LAST PART OF THAT?

9 MR. RILEY: I OBJECT TO THE FORM OF THE
10 QUESTION.

11 THE WITNESS: I HEARD ONLY "INDUSTRY." WHAT
12 ABOUT INDUSTRY?

13 MR. BURGI: STRIKE THE QUESTION.

14 Q. YOU MENTIONED THAT WHENEVER YOU
15 APPROACHED A PARTICULAR SUBSTANCE AND ITS POTENTIAL
16 HEALTH HAZARDS THAT YOU REVIEWED ALL OF THE MEDICAL
17 RECORDS OR CHECKED THE MEDICAL RECORDS BEFORE YOU
18 EVEN WENT TO DO A DUST COUNT WITH RESPECT TO
19 HAZARDOUS DUST. IS THAT CORRECT?

20 A. I DIDN'T SAY THAT WE REVIEWED ALL
21 MEDICAL RECORDS. I SAID WE REVIEWED ALL AVAILABLE
22 LITERATURE -- AT LEAST THAT'S WHAT I MEANT TO SAY.
23 WE HAD NO WAY OF EVALUATING THE MEDICAL RECORD OF
24 EVERY WORKER IN WISCONSIN.

25 Q. OKAY. DO YOU RECALL THE NAMES OF ANY
26 JOURNALS, LITERATURE OR ARTICLES THAT YOU REVIEWED
27 AT ANY TIME WHILE EMPLOYED BY THE STATE OF
28 WISCONSIN, STATE BOARD OF HEALTH, WITH RESPECT TO

1 THE ISSUE OF ASBESTOS EXPOSURE?

2 MR. RILEY: EXCUSE ME. IN ADDITION TO THE
3 TWO THAT HE IDENTIFIED PREVIOUSLY IN THIS
4 DEPOSITION?

5 MR. BURGI:

6 Q. WELL, FIRST OF ALL, ARE THE TWO THAT YOU
7 PREVIOUSLY IDENTIFIED DOCUMENTS THAT YOU STUDIED
8 WITH RESPECT TO THIS ISSUE?

9 MR. RILEY: I THINK IT'S BEEN ASKED AND
10 ANSWERED AS TO WHAT HE DID WITH RESPECT TO THOSE
11 ARTICLES.

12 THE WITNESS: YES. WE STUDIED THE
13 RECOGNIZED JOURNALS AND RECOGNIZED PUBLICATIONS. WE
14 STUDIED THEM BASICALLY WHEN THEY CAME IN.

15 MR. BURGI:

16 Q. RIGHT.

17 A. JUST TO SEE WHAT WAS NEW IN OUR FIELD.
18 IT WAS A NEW FIELD, AND WE WERE LEARNING.
19 THEN WHEN WE WENT IN TO MAKE A STUDY WE REVIEWED ALL
20 THE LITERATURE WE COULD GET OUR HANDS ON, INCLUDING
21 SOME OF WHICH WE HAD RIGHT IN OUR OWN LIBRARY -- AND
22 MUCH MORE, WHICH WE GOT FROM THE MEDICAL LIBRARY AT
23 THE UNIVERSITY OF WISCONSIN HOSPITAL, OR WHATEVER IT
24 IS.

25 WE REVIEWED EVERYTHING WE COULD FIND ON THE
26 SUBJECT. BUT WE SPECIFICALLY, SPECIFICALLY, EVERY
27 MONTH LOOKED AT THE JOURNALS WHICH WE GOT. IT
28 WASN'T JUST THIS ONE. WE GOT LOTS OF OTHERS IN THE

1 FIELD. BUT THIS ONE THAT WAS MENTIONED WAS MORE OR
2 LESS THE BEST KNOWN AND THE MOST UP-TO-DATE
3 INFORMATION.

4 Q. YOU ARE REFERRING TO THE PUBLIC HEALTH
5 BULLETIN?

6 A. THE PUBLIC HEALTH BULLETIN. AND WHAT'S
7 THE NAME OF THAT OTHER ONE? "THE INDUSTRIAL JOURNAL
8 OF INDUSTRIAL HYGIENE AND TOXICOLOGY."

9 Q. ALL RIGHT. AS YOU SIT HERE TODAY DO YOU
10 HAVE ANY INDEPENDENT RECOLLECTION OF ANY OTHER
11 JOURNALS, LITERATURE OR PUBLICATIONS THAT YOU RELIED
12 UPON?

13 A. WE RELIED ON EVERYTHING THAT CAME TO OUR
14 ATTENTION. WE HAD VARIOUS FORMS OF MEDICAL
15 ABSTRACTS THAT CAME TO US.

16 WE HAD INFORMATION FROM THE AMERICAN CHEMICAL
17 SOCIETY, WE HAD HUNDREDS OF BITS OF INFORMATION OF
18 WHICH MAY BE A DOZEN OR TWO WHICH WERE IMPORTANT
19 ENOUGH TO READ IN DETAIL EVERY TIME AND TO FILE AND
20 TO REFER TO WHEN WE NEEDED THEM.

21 BUT YOU CAN FIND THOUSANDS AND THOUSANDS OF
22 ARTICLES ON ALMOST ANY SUBJECT YOU WANTED, AND I
23 DIDN'T READ EVERY ONE OF THEM.

24 BUT WE DID, WE DID KEEP CURRENT WITH THE
25 RECOGNIZED JOURNALS THAT HAD ANYTHING TO DO WITH
26 INDUSTRIAL HYGIENE.

27 Q. AND DID THIS INCLUDE FOREIGN
28 PUBLICATIONS?

1 A. NOT PER SE. BUT WE GOT THE ABSTRACTS
2 THAT COVERED THE FOREIGN PUBLICATIONS.

3 Q. WHO PUBLISHED THESE ABSTRACTS, IF YOU
4 RECALL?

5 A. SOME OF THEM WERE PUBLISHED -- I BELIEVE
6 SOME WERE PUBLISHED BY THE -- BY THIS JOURNAL OF
7 INDUSTRIAL HYGIENE AND TOXICOLOGY.

8 I CAN'T GO ANY FARTHER THAN THAT. I DON'T
9 RECALL JUST WHO PUBLISHED THEM.

10 Q. OKAY.

11 A. YOU'LL FIND IN ALL MEDICAL LITERATURE
12 THERE ARE ABSTRACTS AVAILABLE. SOME ARE PUBLISHED
13 BY THE JOURNALS, THERE'S A SECTION IN SOME OF THE
14 JOURNALS.

15 SOME OF THOSE WERE SENT TO US DIRECTLY FROM
16 THE PUBLIC HEALTH SERVICE. THEY HAD A GROUP THAT
17 REVIEWED A LOT OF LITERATURE AND SENT US THE
18 ABSTRACTS OF THINGS THAT THEY FELT WERE IMPORTANT.

19 Q. I'D LIKE TO REFER YOU TO EXHIBIT
20 NUMBER ONE, WHICH IS A PUBLIC HEALTH BULLETIN
21 NUMBER 241.

22 COULD YOU HAND THAT TO THE WITNESS FOR ME?

23 MR. RILEY: SURE.

24 THE WITNESS: UH-HUH.

25 MR. BURGI:

26 Q. I'D LIKE TO ASK YOU TO TURN TO PAGE 93.

27 A. OKAY. I HAVE 93.

28 Q. EXCUSE ME. PAGE 90.

1 I'D LIKE YOU TO READ UNDER THE HEADING
2 "THRESHOLD CONCENTRATION OF ASBESTOS DUST," THAT
3 FIRST PARAGRAPH.

4 A. I DON'T FIND THAT IN MINE.

5 MR. RILEY: YOU TOLD HIM --

6 MR. BURGI: I'M SORRY. IT'S ON 91.

7 MR. RILEY: CAN I LOOK -- HE HAS MY COPY.
8 CAN I JUST READ THIS?

9 MR. BURGI:

10 Q. WOULD YOU READ IT FOR THE RECORD, SIR?

11 A. READ WHAT? THE FIRST PARAGRAPH?

12 Q. YES. WILL YOU?

13 A. "THRESHOLD CONCENTRATION OF ASBESTOS
14 DUST: FROM A PRACTICAL STANDPOINT, ONE OF
15 THE MOST IMPORTANT RESULTS OF A MEDICAL
16 AND ENGINEERING STUDY SUCH AS THIS IS THE
17 DELINEATION OF SAFE WORKING CONDITIONS IN
18 THE INDUSTRY UNDER STUDY. IDEALLY, A
19 THRESHOLD CONCENTRATION OF DUST SHOULD BE
20 THE HIGHEST DUST CONCENTRATION. IT WOULD
21 NOT PRODUCE PNEUMOCONIOSIS IN ORIGINALLY
22 HEALTHY WORKMEN DURING THEIR ENTIRE
23 WORKING LIFE.

24 "THE CHIEF DIFFICULTY IN THIS STUDY AS IN
25 MOST OF THE EARLIER STUDIES OF THE PUBLIC
26 HEALTH SERVICE IS THAT VERY FEW WORKMEN
27 WERE EXPOSED FOR LONG ENOUGH" --

28 CORRECTION -- "ARE EXPOSED FOR A LONG

1 PERIOD OF TIME TO ~~K-LO~~ CONCENTRATIONS OF
2 ASBESTOS DUST. BECAUSE OF THE IMPORTANCE
3 OF THE PROBLEM IT SEEMS TO BE DESIRABLE TO
4 USE SUCH DATA AS ARE AT HAND TO DEFINE
5 TENTATIVE SAFE WORKING CONDITIONS THAT MAY
6 SERVE AS STANDARDS FOR THE GUIDANCE OF
7 FACTORY MANAGERS AND ENGINEERS UNTIL MORE
8 COMPLETE DATA IS AVAILABLE."

9 Q. WILL YOU GO DOWN ONE MORE PARAGRAPH?
10 YES. ONE MORE PARAGRAPH WHERE IT BEGINS, "BECAUSE
11 CLEAN-CUT" -- AND READ THAT FOR ME AS WELL?

12 MR. RILEY: WAIT A MINUTE. IF WE'RE GOING
13 TO SKIP AROUND I'M GOING TO OBJECT TO THAT. IF YOU
14 ARE TALKING ABOUT READING INTO THE RECORD, WHY DON'T
15 YOU READ IT IN CONTEXT?

16 MR. BURGI:

17 Q. GO AHEAD. WILL YOU CONTINUE TO READ
18 UNTIL YOU GET TO THE END OF THE THIRD PARAGRAPH?

19 A. ARE YOU ASKING ME?

20 Q. YES, PLEASE.

21 A. I SHOULD READ TILL I GET TO THE END OF
22 THE THIRD PARAGRAPH?

23 Q. YES. WHICH ENDS WITH THE WORD
24 "AVAILABLE."

25 JUST CONTINUE TO READ, AND I'LL TELL YOU TO
26 STOP.

27 A. "IN AN ANALYSIS OF THIS KIND OF CASE
28 THAT OCCURRED ^{AT} RELATIVE ^{LY} ^{LOW} ~~TO K-LO~~ DUST

1 EXPOSURES ARE OF A SPECIAL SIGNIFICANCE
2 BECAUSE THEY INDICATE WHAT THE SAFE LIMITS
3 OF EXPOSURE MAY BE. THESE CASES MUST BE
4 EXAMINED INDIVIDUALLY AS WELL AS
5 STATISTICALLY IN ORDER TO BE SURE THAT
6 THERE ARE NO UNUSUAL FEATURES THAT WOULD
7 COMPLICATE STATISTICAL ANALYSIS. BELOW
8 THE TWO AND A HALF MILLION PARTICLES PER
9 CUBIC FOOT THE INTERPRETATION OF TABLE 43
10 OFFERS NO DIFFICULTIES. NONE OF THE
11 39 PERSONS EXPOSED TO DUST CONCENTRATIONS
12 BELOW TWO AND A HALF MILLION PARTICLES PER
13 CUBIC FOOT HAD A CASE OF ASBESTOSIS.
14 ALTHOUGH, AS A MATTER OF FACT, ONLY SIX
15 PERSONS HAD BEEN EMPLOYED MORE THAN FIVE
16 YEARS.

17 "THREE DOUBTFUL CASES OF ASBESTOSIS FELL
18 IN THE RANGE OF TWO AND A HALF TO ONE --
19 TWO AND A HALF TO 4.9 MILLION PARTICLES.
20 BECAUSE CLEAN CUT CASES OF ASBESTOSIS WERE
21 FOUND ONLY IN DUST CONCENTRATIONS
22 EXCEEDING 5.0 MILLION PARTICLES PER CUBIC
23 FOOT AND BECAUSE THEY WERE NOT FOUND AT
24 LOWER DUST CONCENTRATIONS, 5.0 MILLION
25 PARTICLES PER CUBIC FOOT MAY BE REGARDED
26 TENTATIVELY AS THE THRESHOLD VALUE FOR
27 ASBESTOS DUST EXPOSURE UNTIL BETTER DATA
28 ARE AVAILABLE."

1 Q. THANK YOU.

2 SO, IS IT YOUR CONCLUSION FROM THAT PARAGRAPH
3 THAT 5.0 MILLION PARTS PER CUBIC FOOT IS A TENTATIVE
4 M.A.C. WITH RESPECT TO DR. DREESEN'S REPORT?

5 MR. RILEY: EXCUSE ME A SECOND. I DON'T
6 THINK THAT THAT'S FAIR, UNLESS YOU WANT HIM TO READ
7 DR. DREESEN'S REPORT IN ITS ENTIRETY.

8 YOU HAVE JUST PICKED OUT THREE PARAGRAPHS FROM
9 PAGE 91. MY RECOLLECTION IS THAT WE'VE GOT
10 125 PAGES IN THIS ARTICLE, INCLUDING THE CITATIONS.
11 I DON'T THINK IT'S REALLY FAIR TO ASK THIS MAN TO
12 OFFER AN OPINION WITH REGARD TO THIS PIECE OF
13 LITERATURE WITH THAT KIND OF EXPOSURE.

14 MOREOVER, I THINK A REQUEST FOR THAT KIND OF
15 AN OPINION UNRELATED TO THE FACTUAL TESTIMONY IS
16 INAPPROPRIATE.

17 MR. BURGI:

18 Q. NEVERTHELESS, THE QUESTION IS STILL
19 PENDING, WHETHER OR NOT YOU BELIEVE AFTER READING
20 THAT THAT DR. DREESEN FELT 5.0 MILLION PARTS PER
21 CUBIC FOOT WAS A TENTATIVE M.A.C. AT THE TIME HE
22 ISSUED THIS REPORT?

23 MR. RILEY: ALTHOUGH THE WORD "M.A.C."
24 DOESN'T APPEAR IN THAT QUOTED PORTION.

25 MR. BURGI: I BELIEVE HE USES THE TERM
26 THRESHOLD VALUE, A TENTATIVE THRESHOLD VALUE.

27 MR. HARRINGTON: I'LL JOIN IN THE OBJECTION.

28 MR. RILEY: I OBJECT. I DON'T THINK THAT'S

1 FAIR.

2 THE WITNESS: YOU ARE TAKING THAT OUT OF
3 CONTEXT. THREE PARAGRAPHS OUT OF A LENGTHY DOCUMENT
4 LIKE THAT MAKES IT DIFFICULT TO ANSWER SUCH A
5 QUESTION.

6 HOWEVER, EVEN IF THAT WAS THE TENTATIVE
7 THRESHOLD LIMIT VALUE THAT THEN WAS CORROBORATED
8 OVER THE YEARS, AND UP UNTIL AT LEAST THE 1950'S,
9 THE LAST I REMEMBER, THAT WAS CONSIDERED THE MAXIMUM
10 ALLOWABLE CONCENTRATION, NOT THE THRESHOLD -- NOT
11 THE TENTATIVE BUT THE MAXIMUM ALLOWABLE
12 CONCENTRATION.

13 LATER WORK IDENTIFIES 5.0 MILLION PARTICLES
14 PER CUBIC FOOT AS THE M.A.C., NOT THE TENTATIVE
15 M.A.C.

16 WHOSE IS THIS?

17 MR. RILEY: MINE. THANK YOU.

18 MR. BURGI:

19 Q. DURING YOUR EMPLOY WITH THE STATE OF
20 WISCONSIN, STATE BOARD OF HEALTH, DID YOU RECEIVE
21 ANY INFORMATION FROM ANY SOURCE WHICH SUPPORTED OR
22 INDICATED THAT 5.0 MILLION PARTS PER CUBIC FOOT WAS
23 NOT A SAFE LEVEL FOR M.A.C.

24 MR. RILEY: COULD YOU READ THE QUESTION FOR
25 ME, PLEASE?

26

27 (RECORD READ.)

28 THE WITNESS: NOTHING AUTHORITATIVE.

1 MR. BURGI:

2 Q. CAN YOU NAME ME ANY SOURCE WHICH YOU
3 RECALL --

4 A. NO.

5 Q. -- WHICH YOU DO NOT CHARACTERIZE AS
6 AUTHORITATIVE?

7 A. I CAN'T NAME ANY.

8 Q. IF YOU HAD RECEIVED INFORMATION DURING
9 THAT PERIOD OF TIME THAT 5.0 MILLION PARTS PER CUBIC
10 FOOT WAS NOT A SAFE LEVEL, WOULD YOU HAVE
11 RECOMMENDED ANOTHER --

12 MR. RILEY: EXCUSE ME A SECOND.

13 THAT'S ANOTHER HYPOTHETICAL QUESTION, WITHOUT
14 A FOUNDATION, AT LEAST, IN THIS RECORD. AND I THINK
15 IT'S AN INAPPROPRIATE QUESTION TO ASK OF THIS
16 WITNESS, AND I OBJECT.

17 MR. HARRINGTON: I JOIN IN THE OBJECTION.

18 MR. BURGI: YOU ARE FREE TO RESPOND.

19 MR. RILEY: GO RIGHT AHEAD.

20 THE WITNESS: I SHOULD ANSWER?

21 MR. RILEY: YEAH. SURE.

22 THE WITNESS: ONE BIT OF INFORMATION LIKE
23 THAT WOULD NOT CAUSE US TO CHANGE OUR LEVEL.

24 WE WOULD TAKE THAT ALONG WITH ALL THE OTHER
25 INFORMATION, JUDGE THE VALUE OF IT COMPARED WITH
26 EVERYTHING ELSE WE KNEW, AND WE WOULD NOT CHANGE OUR
27 THRESHOLD, OUR MAXIMUM ALLOWABLE CONCENTRATION BASED
28 ON ONE BIT OF INFORMATION FROM ONE SOURCE.

1 MR. BURGI:

2 Q. DO YOU KNOW OF ANY SOURCE DURING YOUR
3 PERIOD WITH WISCONSIN STATE BOARD OF HEALTH OF WHICH
4 YOU BECAME AWARE THAT RECOMMENDED A LOWER STANDARD
5 THAN 5.0 MILLION PARTS PER CUBIC FOOT FOR AN M.A.C.
6 ON ASBESTOS EXPOSURE?

7 A. I DON'T REMEMBER.

8 Q. DID ANY MEMBER OF THE ASBESTOS INDUSTRY
9 EVER TELL YOU THAT THEY HAD REASON TO BELIEVE THAT
10 5.0 MILLION PARTICLES PER CUBIC INCH -- EXCUSE ME --
11 PER CUBIC FOOT OF ASBESTOS IN AN M.A.C. WAS AN
12 UNSAFE LEVEL?

13 MR. RILEY: EXCUSE ME A SECOND.

14 THAT QUESTION PRESUMES THAT SOMEONE IN THE
15 INDUSTRY HELD THAT VIEW, AND I OBJECT TO THE FORM OF
16 THE QUESTION.

17 MR. HARRINGTON: OBJECT TO THE FORM OF THE
18 QUESTION.

19 THE WITNESS: I SHOULD STILL ANSWER IT?

20 MR. RILEY: OVER THE OBJECTION, CERTAINLY.

21 I'M NOT QUITE SURE WHAT THE QUESTION IS, BUT
22 YOU CAN ANSWER IT.

23 THE WITNESS: I DON'T RECALL ANY.

24 I'M ALMOST CERTAIN THAT WE DIDN'T RECEIVE ANY
25 INFORMATION.

26 MR. BURGI:

27 Q. DURING YOUR EMPLOY WITH THE STATE OF
28 WISCONSIN, STATE BOARD OF HEALTH, DID YOU RECEIVE

1 ANY INFORMATION FROM ANY MANUFACTURER OF ASBESTOS OR
2 ASBESTOS CONTAINING PRODUCTS WITH RESPECT TO ANY
3 ASSOCIATED HEALTH HAZARDS WITH EXPOSURE TO THEIR
4 PRODUCTS?

5 A. I DON'T RECALL.

6 Q. WHILE YOU WERE EMPLOYED BY THE STATE OF
7 WISCONSIN, STATE BOARD OF HEALTH, IT WAS YOUR
8 UNDERSTANDING THAT ASBESTOS WAS A TOXIC SUBSTANCE;
9 IS THAT CORRECT.

10 MR. RILEY: OBJECT TO THE FORM OF THE
11 QUESTION. VAGUE AND AMBIGUOUS AS TO WHAT YOU MEAN
12 BY "TOXIC SUBSTANCE." IT'S VAGUE AND AMBIGUOUS,
13 BECAUSE IT DOESN'T SPECIFY AT WHAT LEVEL OR OVER
14 WHAT PERIOD AND UNDER WHAT CIRCUMSTANCES.

15 MR. HARRINGTON: I JOIN IN THE OBJECTION TO
16 THE EXTENT IT DOES NOT SPECIFY ANY LEVEL OR ANY
17 CIRCUMSTANCES.

18 THE WITNESS: I'D LIKE TO ANSWER THAT WITH A
19 QUOTE FROM A VERY FAMOUS DOCTOR: EVERYTHING CAN
20 POTENTIALLY BE TOXIC, INCLUDING PURE AIR AND PURE
21 WATER.

22 HE FIRST STARTED OUT HIS LECTURES BY SAYING
23 EVERYTHING BUT PURE AIR AND PURE WATER CAN BE TOXIC.
24 LATER ON HE SAID EVEN THOSE CAN BE. SO ANYTHING YOU
25 CAN NAME CAN BE A TOXIC MATERIAL IF YOU SET CERTAIN
26 CONDITIONS AND IN CERTAIN AMOUNTS.

27 MR. BURGI:

28 Q. IT'S YOUR UNDERSTANDING THAT ASBESTOS IS

1 A TOXIC SUBSTANCE IN A CERTAIN AMOUNT OF EXPOSURE --
2 TO BORROW YOUR PHRASE?

3 MR. RILEY: ARE YOU GOING TO ADD HIS
4 COMPLETE PHRASE? UNDER CIRCUMSTANCES -- IF YOU HAVE
5 ENOUGH UNDER THE RIGHT CIRCUMSTANCES? ARE YOU
6 GOING TO --

7 MR. BURGI: THAT'S REPETITIOUS.

8 "CIRCUMSTANCES" IS HOWEVER HE DEFINES THE
9 CIRCUMSTANCES.

10 MR. RILEY: WHETHER HE WAS REPETITIOUS OR
11 NOT, I WANT TO KNOW WHETHER YOU ARE GOING TO ADOPT
12 ALL OF HIS LANGUAGE OR JUST SOME OF IT?

13 MR. BURGI: I THINK THE QUESTION IS A
14 COMPLETE QUESTION.

15 MR. RILEY: I'LL OBJECT TO IT, THEN.

16 THE WITNESS: IT'S A POTENTIALLY TOXIC
17 MATERIAL, JUST LIKE ALL CHEMICALS.

18 MR. BURGI:

19 Q. DURING YOUR EMPLOY WITH THE STATE OF
20 WISCONSIN, STATE BOARD OF HEALTH, YOU TESTED
21 NUMEROUS SUBSTANCES; IS THAT CORRECT?

22 A. YES.

23 Q. AND YOU TESTED WORKERS' EXPOSURE TO
24 NUMEROUS SUBSTANCES; IS THAT CORRECT??

25 A. YES.

26 Q. AND DURING THAT ENTIRE PERIOD OF TIME
27 YOU ONLY TESTED TWO FACILITIES WITH RESPECT TO
28 ASBESTOS EXPOSURE; IS THAT CORRECT?

1 A. THAT'S ALL I REMEMBER.

2 Q. WASN'T THE MINING INDUSTRY IN A MUCH
3 BETTER POSITION TO KNOW OF THE POSSIBLE HAZARDS
4 ASSOCIATED WITH ASBESTOS EXPOSURE --

5 MR. HARRINGTON: OBJECT TO THE FORM OF THE
6 QUESTION.

7 MR. BURGI:

8 Q. -- THAN WAS YOUR DEPARTMENT?

9 MR. HARRINGTON: OBJECT TO THE FORM OF THE
10 QUESTION.

11 MR. RILEY: I'M GOING TO OBJECT TO THE FORM
12 OF THE QUESTION, TOO.

13 YOU ARE ASKING HIM TO SPECULATE AS TO THE
14 CAPACITY OF SOMETHING YOU'VE DESCRIBED AS THE MINING
15 INDUSTRY. THAT'S NOT FAIR. THERE'S NO
16 BASIS FOR THAT.

17 MR. BURGI: I'M SORRY. I THOUGHT I USED THE
18 TERM "ASBESTOS MINING INDUSTRY."

19 MR. RILEY: EVEN WITH THAT, IF YOU DID ADD
20 IT, IF YOU DIDN'T MEAN TO OMIT IT, IF YOU ADDED IT,
21 I DON'T THINK THAT SAVES THE QUESTION.

22 I DON'T THINK IT'S FAIR TO ASK HIM TO
23 SPECULATE UNDER THOSE CIRCUMSTANCES.

24 MR. HARRINGTON: I STILL OBJECT TO THE FORM
25 OF THE REPHRASED QUESTION.

26 MR. RILEY: I OBJECT AS WELL.

27 THE WITNESS: I CAN'T ANSWER THAT.

28 THAT WOULD BE PURELY A MATTER OF PROFESSIONAL

1 OPINION, NOT OF FIRST-HAND KNOWLEDGE. I CAN'T
2 ANSWER THAT.

3 MR. BURGI:

4 Q. DID ANY MEMBER OR REPRESENTATIVE OF THE
5 ASBESTOS INDUSTRY REVEAL ANY EVIDENCE TO YOU OR ANY
6 MEMBER OF YOUR DEPARTMENT THAT YOU ARE AWARE OF THAT
7 ALLEGED THAT ASBESTOS COULD CAUSE CANCER?

8 MR. HARRINGTON: JUST A MINUTE. LET ME I
9 INTERPOSE AN OBJECTION. YOU'VE ASKED ABOUT ASBESTOS
10 PRODUCTS MANUFACTURERS, AND THEN YOU'VE ASKED ABOUT
11 ASBESTOS MINERS, AND NOW YOU ARE REFERRING TO THE
12 ASBESTOS INDUSTRY. WHAT ARE YOU TALKING ABOUT?

13 MR. BURGI: WHEN I REFER TO THE ASBESTOS
14 INDUSTRY I'M INCLUDING FROM MINING TO FINISHED
15 PRODUCT, ANY MEMBER OF THAT INDUSTRY WHO'S ENGAGED
16 IN THE MINING OR PRODUCTION OF ASBESTOS CONTAINING
17 PRODUCTS.

18 MR. HARRINGTON: MAY I HEAR THE QUESTION
19 AGAIN NOW, PLEASE?

20 (RECORD READ.)

21
22 MR. RILEY: I'M GOING TO OBJECT TO THAT,
23 BECAUSE THE WAY IT'S PHRASED IT SUGGESTS THAT SUCH
24 EVIDENCE EXISTED AND WAS A QUESTION OF WHETHER IT
25 WAS REVEALED OR NOT. I THINK THAT BEING IMPLICIT IN
26 THE QUESTION MAKES IT INAPPROPRIATE. IT IS ALSO
27 INAPPROPRIATE AS TO FORM IN OTHER RESPECTS.

28 MR. BURGI: HE EITHER RECEIVED SUCH EVIDENCE

1 OR HE DIDN'T.

2 MR. HARRINGTON: LET ME JUST ADD THE BASIS
3 OF MY OBJECTION. THE BASIS OF MY OBJECTION IS THAT
4 THE WORD "REVEALED" IS VAGUE AND AMBIGUOUS, BECAUSE
5 THERE IS NO DELINEATION BETWEEN INFORMATION WHICH
6 MAY HAVE BEEN AVAILABLE THROUGH SECONDARY SOURCES --
7 PUBLICATIONS, ET CETERA, THROUGH TRADE GROUPS THAT
8 HE WAS ASSOCIATED WITH -- AND DIRECT COMMUNICATIONS
9 FROM ANY OF THOSE PERSONS THAT YOU ARE REFERRING TO
10 IN THE ASBESTOS INDUSTRY DEFINITION.

11 MR. RILEY: I ALSO THINK THE QUESTION IS
12 VAGUE AND AMBIGUOUS, SINCE THERE IS NO DOSAGE LEVEL
13 OR CIRCUMSTANCE OF EXPOSURE INFORMATION IN THERE.

14 MR. BURGI:

15 Q. YOU ARE FREE TO RESPOND.

16 A. I DON'T RECALL ANY CONTACT DIRECTLY FROM
17 ANY ASBESTOS INDUSTRY INDICATING THAT THERE WAS A
18 PROBLEM OF CANCER.

19 MR. BURGI:

20 Q. I WANT TO TAKE A LOOK AT SOME OF THE
21 DOCUMENTS HERE THAT WE REFERRED TO EARLIER THAT WERE
22 PART OF THE DETJIN -- IS THAT HOW YOU PRONOUNCE IT?

23 MR. RILEY: DETJIN.

24 MR. BURGI:

25 Q. -- DETJIN EXHIBITS.

26 I NOTICED IN EXHIBIT NUMBER ELEVEN THAT THE
27 ISSUE OF THE BAGGING OPERATION ARISES FOR THE FIRST
28 TIME WITH RESPECT TO YOUR TESTING OF THE FACILITY;

1 IS THAT CORRECT?

2 MR. RILEY: WELL, WAIT A MINUTE. I'M GOING
3 TO --

4 MR. BURGI: STRIKE THAT. I'LL REPHRASE IT.

5 Q. SIR, IS THERE ANY REASON WHY IN YOUR
6 TESTING OF THE ALGOMA PLANT ON FEBRUARY 13, '48,
7 THAT YOU DID NOT TEST EITHER THE BAGGING OPERATION
8 OR THE UNLOADING OF BOX CAR OPERATION?

9 MR. RILEY: EXCUSE ME A MOMENT. YOU ARE
10 REFERRING TO A DOCUMENT THAT THE WITNESS DOESN'T
11 HAVE BEFORE HIM, NOR DO I.

12 MR. BURGI: THAT QUESTION REFERS TO NO
13 DOCUMENT.

14 MR. RILEY: IT REFERS TO HIS TESTING IN
15 FEBRUARY OF 1948. THE DOCUMENT YOU'VE REFERRED HIM
16 TO IS AN OCTOBER 28, 1948 LETTER.

17 MR. BURGI: MY LAST QUESTION REFERRED TO NO
18 DOCUMENT.

19 WOULD YOU READ IT BACK, PLEASE?

20 MR. RILEY: WAIT A MINUTE. READ IT BACK.

21 MR. BURGI: I STRUCK THE QUESTION, COUNSEL.

22 LET ME REPHRASE IT AGAIN SO THAT IT'S CLEAR
23 FOR EVERYONE.

24 Q. AT THIS TIME WITH THIS QUESTION I'M NOT
25 REFERRING TO ANY DOCUMENTS.

26 IS THERE ANY REASON WHY YOUR TESTING OF THE
27 ALGOMA PLANT, FEBRUARY 13, 1948, DID NOT INCLUDE
28 TESTS OF THE BAGGING OPERATION OR THE BOXCAR LOADING

1 OPERATIONS WHICH YOU LATER TESTED?

2 MR. RILEY: I'M GOING TO OBJECT TO THE FORM
3 OF THE QUESTION.

4 YOU OUGHT TO AT LEAST HAVE THE COURTESY TO PUT
5 THE DOCUMENT THAT YOU ARE REFERRING TO, THE
6 FEBRUARY 13 TEST, IN FRONT OF HIM SO HE CAN LOOK AT
7 IT TO DETERMINE WHETHER EVEN THE FACTUAL PREDICATE
8 TO YOUR QUESTION IS TRUE.

9 MR. BURGI:

10 Q. DO YOU UNDERSTAND MY QUESTION?

11 A. YES. THEY WEREN'T CONSIDERED
12 SIGNIFICANT ENOUGH TO BOTHER WITH AT THE TIME.

13 WE DO NOT WHEN WE GO INTO A FACTORY, SPEND
14 THREE WEEKS THERE AND TEST EVERY MACHINE EVERYPLACE
15 IN THE FACTORY.

16 WE EVALUATE WHAT SEEMS TO BE WORTHWHILE
17 LOOKING AT. AND THESE OPERATIONS WERE OF SUCH SHORT
18 DURATION, SO INFREQUENT, THAT THERE WAS NOT IN OUR
19 PROFESSIONAL JUDGMENT ANY ^{NEED} ~~TIME~~ TO WASTE TIME AND
20 MONEY TO TEST THEM.

21 Q. DURING YOUR EMPLOY WITH THE WISCONSIN
22 STATE BOARD OF HEALTH DID YOU BECOME AWARE OF ANY
23 TESTING SPECIFICALLY OF THE K-LO PRODUCT?

24 A. WHAT DO YOU MEAN BY TESTING OF THE K-LO
25 PRODUCT? WHAT SORT OF TESTING?

26 Q. WELL, LET ME BE MORE SPECIFIC.

27 DURING YOUR EMPLOY WITH THE WISCONSIN STATE
28 BOARD OF HEALTH DID YOU BECOME AWARE OF ANY ANIMAL

1 STUDIES WHICH TESTED SPECIFICALLY EXPOSURE TO K-LO
2 CONTAINING ASBESTOS PRODUCTS?

3 A. I DON'T REMEMBER.

4 Q. DURING YOUR EMPLOY WITH THE WISCONSIN
5 STATE BOARD OF HEALTH DID YOU BECOME AWARE OF ANY
6 STUDIES WHICH DEALT SPECIFICALLY WITH EXPOSURE TO
7 K-LO PRODUCTS?

8 A. I DON'T REMEMBER.

9 Q. I'D LIKE TO REFER YOU TO EXHIBIT
10 SIXTEEN, PAGE TWO.

11 MR. RILEY: THERE IS NO SECOND PAGE TO
12 EXHIBIT SIXTEEN.

13 MR. BURGI: I HAVE A PAGE TWO, WHICH HAS 118
14 AT THE BOTTOM OF IT.

15 MR. RILEY: YOU ARE TALKING ABOUT --

16 MR. HARRINGTON: THAT'S ON EXHIBIT FOURTEEN.

17 MR. BURGI: ALL RIGHT. FOURTEEN, PAGE TWO.

18 Q. DO YOU HAVE THAT IN FRONT OF YOU, SIR?

19 A. A LISTING OF -- YES.

20 Q. I'D LIKE TO REFER YOU TO YOUR
21 CONCLUSIONS.

22 IN YOUR CONCLUSION YOU SAY "SUCH
23 CONCENTRATIONS ARE, NEVERTHELESS, A BORDERLINE
24 SITUATION FROM THE ASBESTOSIS" -- EXCUSE ME --
25 "ASBESTOS STANDPOINT AND CAN CAUSE RESPIRATORY
26 IRRITATIONS."

27 DO YOU SEE THAT PORTION?

28 A. YES.

1 MR. HARRINGTON: YOU MISREAD THAT, COUNSEL.
2 THAT WORD IS "ASBESTOSIS" ON MY COPY.

3 MR. BURGI: IT IS IN FACT ASBESTOSIS.

4 MR. RILEY: AND I'LL OBJECT TO READING ONLY
5 A PORTION OF THE SENTENCE.

6 MR. BURGI:

7 Q. WOULD YOU EXPLAIN FOR ME WHAT YOU MEANT
8 BY RESPIRATORY IRRITATIONS?

9 A. IT'S OF GENERAL KNOWLEDGE IN THE
10 INDUSTRIAL HYGIENE PROFESSION THAT HIGH
11 CONCENTRATIONS, HIGH ANYTHING, IN THE NEIGHBORHOOD
12 OF 30, 40 PARTS PER MILLION, OF ANY DUST, EVEN A
13 SO-CALLED --

14 MR. RILEY: YOU SAID 30 OR 40. DO YOU MEAN
15 30 OR 40 MILLION?

16 A. 30 OR 40 MILLION, YEAH. 30 OR 40
17 MILLION, EVEN WHAT WE CALL NUISANCE DUSTS, CAN CAUSE
18 RESPIRATORY IRRITATION.

19 THAT MAY HAVE BEEN POOR WORDING ON MY PART IN
20 WRITING THE REPORT, WHERE I SAY "FROM THE ASBESTOSIS
21 STANDPOINT."

22 BUT EVEN IF YOU TAKE IT WORD FOR WORD IT
23 STILL IS BASED ON SIMPLY A SIMPLE ~~REGULATORY~~ ^{RESPIRATORY} (a)
24 IRRITATION, JUST LIKE YOU'D GET FROM INHALING DUST
25 ON A DUSTY ROAD OR SOMEBODY ELSE'S TOBACCO SMOKE OR
26 SOMETHING OF THAT. THAT WAS PUT IN THERE AS AN
27 INCENTIVE FOR MANAGEMENT TO CUT THE DUST COUNT DOWN.
28 WE WOULD PUT IN THE SAME RECOMMENDATION FOR WOOD

1 DUST OR FOR FLOWER DUST OR WHEAT DUST, TO REDUCE THE
2 IRRITATION FROM THE DUST.

3 Q. AND WHAT WAS MEANT BY "BORDERLINE
4 SITUATION" FROM THE ASBESTOSIS STANDPOINT?

5 A. AGAIN, WE USED THAT WORDING IN ORDER TO
6 ENCOURAGE MANAGEMENT TO DO SOMETHING ABOUT IT. IT'S
7 A PLAY ON WORDS TO SORT OF TEASE THEM ALONG TO DO
8 SOMETHING.

9 Q. NOW WITH RESPECT TO YOUR TESTING AT THE
10 ALGOMA PLANT WAS ANY SYSTEM OR METHOD UTILIZED TO
11 DETERMINE IF THE SAME QUANTITY OF MATERIALS WERE
12 BEING PROCESSED OR MANUFACTURED DURING YOUR TESTING
13 AS OPPOSED TO WHEN YOU WERE NOT THERE TESTING?

14 A. NO. WE DIDN'T GO INTO IT IN TERMS OF
15 THEIR PRODUCTION CAPACITY.

16 IF WE HAD FOUND SERIOUS CONCENTRATIONS WE
17 WOULD HAVE SPENT A LOT MORE TIME THERE AND LOOKED
18 INTO THEIR MANUFACTURING PROCESS AND DETERMINED HOW
19 IT FLUCTUATED DAY BY DAY AND WEEK BY WEEK. BUT YOU
20 DON'T SPEND THAT MUCH TIME UNTIL YOU FIND A NEED FOR
21 IT. WE DON'T KNOW HOW IT FLUCTUATED.

22 Q. SO NO SUCH SYSTEM OR METHOD WAS USED TO
23 TRY AND ASSURE YOURSELF THAT THE AMOUNT OF PRODUCT
24 BEING MANUFACTURED DURING YOUR TESTING WAS IN FACT
25 AN AVERAGE OR SOMEHOW REPRESENTED WHAT THEY NORMALLY
26 PRODUCED?

27 MR. RILEY: OBJECTION. JUST ASKED, JUST
28 ANSWERED.

1 THE WITNESS: I ANSWERED THAT IN THE LAST
2 QUESTION.

3 MR. BURGI:

4 Q. I WANT TO REFER YOU TO ANOTHER EXHIBIT.
5 THAT WOULD BE EXHIBIT SIX OF DETJIN --

6 MR. RILEY: SIX?

7 MR. BURGI: HANG ON JUST A SECOND.

8 MR. RILEY: I THINK HE'S GOING TO PICK
9 ANOTHER DOCUMENT.

10 MR. BURGI: DO YOU HAVE YOUR HAND ON THE
11 NURSE'S DOCUMENT, WHERE SHE MENTIONS THE INSURANCE?

12 MR. RILEY: NO.

13 MR. BURGI:

14 Q. ALL RIGHT. IT'S EXHIBIT NUMBER
15 SEVENTEEN. MY APOLOGY. HERE'S MY COPY.

16 A. WHAT'S THE QUESTION?

17 Q. AFTER YOUR DEPARTMENT HAVING RECEIVED
18 THIS CORRESPONDENCE DID YOU HAVE ANY CONCERN THAT
19 THE WORK AT THE ALGOMA PLANT WOULD BE ALTERED FOR
20 PURPOSES OF OBTAINING FAVORABLE STUDIES FOR THE
21 INSURANCE CARRIER OF THE ALGOMA FACILITY?

22 MR. RILEY: WHAT? EXCUSE ME A SECOND. I
23 JUST GOT MY HAND ON THE DOCUMENT HERE.

24 I OBJECT TO THAT.

25 THERE IS NOTHING IN THIS LETTER THAT MAKES ANY
26 REFERENCE TO -- I MEAN, I DON'T KNOW WHAT THOSE TWO
27 HAVE TO DO WITH ONE ANOTHER.

28 I WANT THE RECORD TO REFLECT WHAT THIS SAYS:

1 "WE WOULD LIKE A COUNT MADE OF THE
2 ASBESTOS DUST CONCENTRATIONS IN OUR K-LO
3 MANUFACTURING PLANT AT OUR CONVENIENCE.

4 MR. WILLIAM FLUCK MADE A SURVEY HERE
5 JULY 29 OF LAST YEAR AND OUR INSURANCE
6 CARRIER REQUESTS A REPEAT COUNT AT THIS
7 TIME. YOUR ATTENTION IS APPRECIATED.

8 VERY TRULY YOURS."

9 I THINK IT'S TOTALLY INAPPROPRIATE TO SUGGEST
10 THAT THAT DOCUMENT HAS IN IT THE SUGGESTION OR
11 INNUENDO YOU PUT IN YOUR QUESTION.

12 MR. BURGI: I MADE NO SUCH INNUENDO. I JUST
13 WONDERED WHETHER HE HAD ANY SUCH CONCERN WHEN HE DID
14 HIS TESTING.

15 MR. RILEY: CONCERN ABOUT WHAT?

16 THE WITNESS: REPEAT THE QUESTION. WHAT
17 WAS THE CONCERN?

18 MR. BURGI:

19 Q. DID YOU HAVE ANY CONCERN THAT THE WORK
20 THAT WAS BEING PERFORMED DURING YOUR TESTING WAS IN
21 ANY WAY ALTERED FOR THE BENEFIT OF THE ALGOMA PLANT
22 TO SECURE INSURANCE?

23 MR. RILEY: I OBJECT TO THE FORM OF THE
24 QUESTION. ALTERED BY WHOM?

25 MR. BURGI:

26 Q. ALTERED BY THE ALGOMA PLANT.

27 MR. RILEY: ALTERED HIS WORK?

28 / / /

1 MR. BURGI: LET'S REPHRASE THE QUESTION.

2 Q. WHEN YOU PERFORMED --

3 A. LET ME SEE THAT.

4 Q. WHEN YOU PERFORMED YOUR TESTING AT THE
5 ALGOMA PLANT FOLLOWING THIS JULY 20, 1949 LETTER
6 FROM NURSE BRICE, DID YOU HAVE ANY CONCERN THAT THE
7 PRODUCTION WOULD BE ALTERED IN ORDER TO GET
8 FAVORABLE TEST RESULTS BY ALGOMA?

9 A. I HAD NO CONCERN. I HAD NO CONCERN AT
10 ALL.

11 I CAN'T IMAGINE ANY MANUFACTURING PLANT
12 SHUTTING DOWN THEIR PROCESS JUST TO --

13 Q. ANY ALTERATION OF ANY KIND?

14 A. NO. I WASN'T CONCERNED ABOUT THAT.

15 Q. OKAY. THANK YOU.

16 YOU MENTIONED IN PREVIOUS TESTIMONY THAT YOU
17 HAD BECOME AWARE THROUGH SOME SOURCE THAT SOME
18 TESTING HAD BEEN PERFORMED AT THE ALGOMA PLANT AFTER
19 YOU LEFT, BUT YOU DID NOT KNOW WHO DID THE TESTING;
20 IS THAT CORRECT?

21 A. YEAH.

22 Q. HOW DID YOU ACQUIRE THE BELIEF THAT
23 TESTING WAS PERFORMED?

24 A. I RECEIVED A COPY OF A REPORT FROM THIS
25 GENTLEMAN HERE.

26 MR. RILEY: ME.

27 MR. BURGI:

28 Q. AND WHO IS THAT?

1 MR. RILEY: BOB RILEY.

2 MR. BURGI:

3 BOB RILEY.

4 PRIOR TO RECEIVING A COPY OF THAT REPORT FROM
5 BOB RILEY WERE YOU AWARE THAT ANY TESTING HAD BEEN
6 PERFORMED AFTER YOU LEFT THE WISCONSIN STATE BOARD
7 OF HEALTH ON THE ALGOMA PLANT?

8 A. NO.

9 Q. DID YOU DISCUSS THE REPORT WHICH YOU
10 RECEIVED FROM COUNSEL AT ANY TIME.

11 MR. HARRINGTON: YOU'D BETTER DEFINE WHO YOU
12 MEAN WHEN YOU SAY "COUNSEL."

13 MR. BURGI: REPHRASE IT? OKAY.

14 MR. HARRINGTON: BECAUSE THERE'S TWO OF US.

15 MR. BURGI: ALL RIGHT.

16 Q. WHEN IS THE FIRST TIME YOU ENGAGED IN
17 ANY CONVERSATION WITH ANY PARTY TO THE LITIGATION
18 THAT WE'RE PRESENTLY ENGAGED IN THIS DEPOSITION FOR?

19 MR. RILEY: A PARTY TO THE LITIGATION? I
20 DON'T THINK THAT'S --

21 MR. BURGI:

22 Q. ANY PARTY.

23 MR. RILEY: BY "PARTY," HE MEANS A PLAINTIFF
24 OR A DEFENDANT.

25 MR. BURGI:

26 Q. PLAINTIFF, DEFENDANT, COUNSEL --

27 MR. RILEY: I'M NOT A PARTY IN THIS
28 LITIGATION.

1 MR. BURGI:

2 Q. -- WHETHER AN INVESTIGATOR --

3 A. FOR WHOM DID I FIRST HEAR ABOUT THE
4 LITIGATION?

5 Q. YES.

6 A. FROM MR. RILEY.

7 Q. WHEN DID THAT OCCUR?

8 A. ABOUT A YEAR AGO.

9 Q. AND DID YOU DISCUSS THE LITIGATION
10 ITSELF?

11 A. NO.

12 Q. DID YOU DISCUSS ANY OF THE INFORMATION
13 WITH RESPECT TO WHAT WE'VE DISCUSSED TODAY AS TO
14 YOUR WORK FOR THE WISCONSIN STATE BOARD OF HEALTH?

15 A. HE HAD COPIES OF MY REPORT. WE
16 DISCUSSED THAT.

17 Q. AND DID YOU DISCUSS EACH REPORT WITH
18 HIM?

19 A. EXCUSE ME?

20 Q. DID YOU DISCUSS EACH REPORT WITH HIM
21 THAT WE'VE GONE THROUGH TODAY?

22 A. I DON'T KNOW.

23 IT SEEMS TO ME THAT HE ONLY HAD TWO REPORTS
24 WITH HIM AT THE TIME, BUT I'M NOT SURE.

25 Q. WAS THAT DONE VIA TELEPHONE OR IN
26 PERSON?

27 A. IN PERSON.

28 Q. DID HE COME TO YOUR HOME?

1 A. YES.

2 Q. AND HOW LONG DID THAT VISIT LAST?

3 A. AN HOUR, HOUR AND A HALF? I DON'T KNOW.

4 Q. AND AT THAT TIME DID HE PROVIDE YOU WITH
5 ANY PAPERS OTHER THAN THE TWO REPORTS THAT YOU
6 MENTIONED?

7 A. NO.

8 HE DIDN'T EVEN PROVIDE ME WITH THOSE. WE JUST
9 TALKED ABOUT THEM.

10 Q. OKAY. AND AT WHAT POINT DID HE PROVIDE
11 YOU WITH THE LATER REPORTS THAT WERE DONE BY SOMEONE
12 ELSE?

13 A. WHEN I ASKED HIM FOR -- SAY THAT AGAIN,
14 PLEASE. I DIDN'T HEAR ALL THE QUESTION.

15 Q. AT WHAT POINT IN TIME DID HE PROVIDE YOU
16 WITH THE LATER REPORTS OF THE ALGOMA PLANT THAT WERE
17 PERFORMED BY SOMEONE ELSE?

18 A. WHEN I ASKED HIM FOR THE REPORT FOR
19 WHATEVER WAS AVAILABLE. I WANTED TO SEE MY OWN
20 REPORT BEFORE I TALKED ABOUT IT. I WANTED -- I HAD
21 SEEN IT, BUT HADN'T BEEN ABLE TO STUDY IT, AND I
22 WANTED TO REFRESH MY MEMORY ON THAT.

23 Q. WHAT DOCUMENTS DID HE PROVIDE TO YOU
24 OTHER THAN YOUR OWN REPORTS?

25 A. TWO TECHNICAL STUDIES.

26 Q. AND WHAT TECHNICAL STUDIES WERE THOSE?

27 A. THE ONES THAT ARE LISTED AS -- THE ONE
28 BY THE PUBLIC HEALTH SERVICE.

1 Q. THE ONES THAT WERE ADMITTED AS EXHIBITS
2 ONE AND TWO?

3 A. YES.

4 Q. AND IN ADDITION TO YOUR REPORTS THEN AND
5 EXHIBITS ONE AND TWO OF THIS DEPOSITION, HE ALSO
6 PROVIDED YOU WITH A COPY OF A REPORT OF THE ALGOMA
7 FACILITY AFTER YOU HAD LEFT THE WISCONSIN STATE
8 BOARD --

9 A. YES.

10 Q. HOW MANY SUCH REPORTS WERE THERE?

11 A. I DON'T KNOW. I JUST GLANCED THROUGH
12 THEM. I DIDN'T COUNT THEM. WHAT WERE THERE? TWO?
13 I DON'T KNOW.

14 MR. RILEY: THEY'RE ALL MARKED AS EXHIBITS
15 IN OTHER DEPOSITIONS. THEY'RE ALL MARKED.

16 MR. BURGI:

17 Q. DID YOU MEET AT ANY TIME OTHER THAN THAT
18 ONE OCCASION OTHER THAN A YEAR AGO WHEN HE CAME OUT
19 TO YOUR HOME?

20 A. HE CAME ONE OTHER TIME.

21 Q. HOW MANY OCCASIONS?

22 A. ONE OTHER TIME, I SAID. A TOTAL OF TWO
23 TIMES PRIOR TO THIS.

24 Q. OKAY. WHEN WAS THE SECOND OCCASION?

25 A. SOMETIME -- SEPTEMBER SOMETIME? I THINK
26 EITHER LATE AUGUST OR EARLY SEPTEMBER.

27 Q. DID HE COME TO YOUR HOME ONCE AGAIN?

28 A. YES.

1 Q. AND DID YOU DISCUSS IN DETAIL YOUR
2 REPORTS AT THAT TIME?

3 MR. RILEY: OBJECT TO THE FORM OF THE
4 QUESTION IN TERMS OF IT BEING VAGUE AND AMBIGUOUS.

5 THE WITNESS: WE JUST DISCUSSED THE REPORTS.

6 MR. BURGI:

7 Q. DID YOU ALSO DISCUSS THE TWO ITEMS WHICH
8 ARE ADMITTED AS EXHIBITS ONE AND TWO TO THIS
9 DEPOSITION?

10 A. NO. HE JUST ASKED IF I'D SEEN THEM.

11 Q. AND HOW LONG DID THAT VISIT LAST?

12 A. I DON'T KNOW. MY GOSH. AN HOUR? HOUR
13 AND A HALF?

14 Q. AND DID HE PROVIDE YOU WITH ANY
15 ADDITIONAL INFORMATION AT THAT MEETING?

16 A. AT THAT SECOND MEETING WAS THE FIRST
17 TIME I LEARNED ABOUT THE LITIGATION. I DIDN'T EVEN
18 KNOW WHICH SIDE HE WAS ON OR ANYTHING ELSE.

19 Q. SO AT THE FIRST MEETING YOU WERE NOT
20 AWARE THAT THERE WAS ANY LITIGATION PENDING?

21 A. YES. I WAS AWARE THERE WAS SOME
22 LITIGATION PENDING BUT I DIDN'T KNOW WHO WAS DOING
23 WHAT TO WHOM. I DIDN'T ASK ANY QUESTIONS.

24 Q. DO YOU HAVE IN YOUR POSSESSION ANY
25 DOCUMENTS WHICH RELATE TO YOUR WORK AT THE WISCONSIN
26 STATE BOARD OF HEALTH?

27 MR. RILEY: DO YOU MEAN OTHER THAN THESE
28 DOCUMENTS?

1 MR. BURGI: ABSOLUTELY.

2 MR. RILEY: SOMETHING HE'S KEPT?

3 MR. BURGI: ABSOLUTELY.

4 THE WITNESS: I HAVE, PROBABLY, IF THEY
5 WEREN'T DESTROYED BY THE RAT, SOME REPRINTS OF
6 STUDIES THAT WE PUBLISHED OR HAD READY TO PUBLISH.

7 THE REASON I SAY "BY THE RAT," WE HAD A RAT IN
8 OUR GARAGE WHERE I STORE ALL OF MY, ALL OF MY
9 PAPERS; AND I HAD TO THROW ALMOST EVERYTHING AWAY
10 AFTER SHE GOT THROUGH.

11 MR. BURGI:

12 Q. DO YOU KNOW IF ANY OF THOSE STUDIES
13 DISCUSS OR MENTION IN ANY WAY ASBESTOS EXPOSURE?

14 A. THEY DO NOT.

15 Q. DO YOU HAVE ANY BOOKS OR PUBLICATIONS IN
16 YOUR POSSESSION WHICH YOU RELY UPON FOR YOUR
17 OPINIONS WITH RESPECT TO ASBESTOS EXPOSURE?

18 A. I DON'T HAVE ANY. I GOT RID OF ALL OF
19 MY REFERENCE BOOKS THAT PERTAINED TO INDUSTRIAL
20 HYGIENE. I HAVE ONE ON NOISE AND ONE ON NUCLEAR
21 PHYSICS, BUT I HAVE NOTHING ON INDUSTRIAL HYGIENE.

22 Q. SO YOU HAVE NO REFERENCE SOURCES OR
23 JOURNALS WHICH RELATE TO ASBESTOS EXPOSURE PRESENTLY
24 IN YOUR POSSESSION?

25 A. NO.

26 MR. BURGI: I'M EMBARRASSED. I FORGOT YOUR
27 NAME.

28 MR. RILEY: I'M BOB RILEY.

1 MR. BURGI:

2 Q. DID MR. RILEY DISCUSS ANY SPECIFIC
3 TESTIMONY WITH YOU ON ANY OCCASION PRIOR TO TODAY?

4 MR. RILEY: OBJECT TO THE FORM OF THE
5 QUESTION. I THINK THAT'S VAGUE AND AMBIGUOUS.

6 YOU MEAN SOMEBODY ELSE'S TESTIMONY?

7 MR. BURGI:

8 Q. DID MR. RILEY DISCUSS WITH YOU THE TYPES
9 OF QUESTIONS THAT WOULD BE ASKED OF YOU TODAY?

10 A. OH, NO.

11 MR. BURGI: I HAVE NO FURTHER QUESTIONS.

12 MR. RILEY: I JUST HAVE A COUPLE FOLLOW-UP
13 QUESTIONS.

14

15 FURTHER EXAMINATION

16 BY MR. RILEY:

17 Q. HAVE YOU ALSO BEEN CONTACTED BY A
18 REPRESENTATIVE OF THE PLAINTIFF IN CONNECTION WITH
19 THIS DEPOSITION?

20 A. I DON'T KNOW. SOMEBODY CALLED ME ON THE
21 PHONE AWHILE BACK AND ASKED ME A LOT OF QUESTIONS
22 AND KNEW THAT THERE WAS GOING TO BE THIS DEPOSITION.

23 BUT I DON'T HEAR VERY WELL OVER THE PHONE, AND
24 I CUT HER OFF AFTER AWHILE 'CAUSE I WASN'T GOING TO
25 ANSWER A LOT OF QUESTIONS OVER THE PHONE.

26 Q. WAS IT YOUR UNDERSTANDING THAT THIS
27 PERSON WAS SOMEONE FROM THE OFFICE OF THE LAW FIRM
28 THAT REPRESENTED THE PLAINTIFF?

1 A. I DON'T EVEN REMEMBER THE NAME OF THE
2 LAW FIRM. I COULDN'T HEAR IT VERY CLEAR. SOMEBODY
3 CALLED AND SAID "I'M WITH SUCH AND SUCH A LAW FIRM
4 AND WE'RE GOING TO HAVE THIS -- I UNDERSTAND YOU ARE
5 HAVING THIS DEPOSITION ON TUESDAY THE 14TH, BLAH,
6 BLAH, BLAH, COULD I ASK YOU SOME QUESTIONS" -- AND
7 BEFORE I COULD ANSWER SHE STARTED ASKING QUESTIONS,
8 AND HALF OF WHICH I COULDN'T HEAR, AND SO I JUST
9 DECLINED TO ANSWER ANY MORE.

10 I ANSWERED A FEW ABOUT "WAS I WITH THE STATE
11 HEALTH DEPARTMENT," ET CETERA, ET CETERA, AND CUT
12 HER OFF. I DON'T KNOW WHERE SHE WAS FROM, WHAT HER
13 NAME WAS OR ANYTHING.

14 Q. OKAY.

15 A. MAYBE IT WAS ONE OF YOU GUYS.

16 Q. I CAN TELL YOU, IT'S NOBODY FROM MY
17 OFFICE.

18 MR. BURGI: OBJECTION. CALLS FOR
19 SPECULATION.

20 MR. RILEY: THAT'S A STATEMENT OF FACT, NOT
21 A QUESTION.

22 Q. MR. BERGAN ASKED YOU --

23 MR. BURGI: BURGI.

24 MR. RILEY:

25 Q. MR. BURGI ASKED YOU IF ANYBODY EVER GAVE
26 YOU ANY INFORMATION ABOUT TESTING, ANIMAL TESTING
27 THAT WAS DONE WITH RESPECT TO THE K-LO PRODUCT.

28 I WANT TO FOLLOW UP ON THIS QUESTION, BECAUSE

1 YOU INDICATED THAT YOU HAD NOT RECEIVED ANY SUCH
2 CONTACT.

3 IF AT THE TIME THAT YOU WERE DOING YOUR WORK
4 AT THE ALGOMA PLANT YOU HAD BEEN TOLD THAT RATS,
5 GUINEA PIGS AND HAMSTERS WERE EXPOSED OVER THEIR
6 LIFETIMES TO EXPOSURES OF K-LO DUST RANGING UP TO
7 ONE HUNDRED MILLION PARTICLES PER CUBIC FOOT OF AIR,
8 24 HOURS A DAY, LIVING IN THE ENVIRONMENT; AND THAT
9 WHEN THE RATS AND HAMSTERS AND GUINEA PIGS WERE
10 SACRIFICED THERE WAS EVIDENCE OF FIBROSIS IN THE
11 ANIMALS AKIN TO ASBESTOSIS IN SOME OF THE ANIMALS,
12 WOULD THAT INFORMATION HAVE CHANGED IN ANY WAY YOUR
13 WORK AT THE ALGOMA PLANT?

14 MR. BURGI: I WANT TO INTERPOSE AN
15 OBJECTION. INCOMPLETE HYPOTHETICAL. VAGUE, AND
16 ALSO AMBIGUOUS. CALLS FOR SPECULATION, ALSO.

17 MR. RILEY:

18 Q. GO AHEAD AND ANSWER.

19 A. ASBESTOSIS IN THESE EXPERIMENTAL
20 ANIMALS?

21 Q. FIBROSIS CONSISTENT WITH ASBESTOSIS.

22 A. HIGH CONCENTRATIONS WAY ABOVE THE
23 PERMISSIBLE RANGE --

24 Q. YES.

25 A. -- M.A.C.?

26 Q. YES.

27 A. IT WOULDN'T AFFECT US VERY MUCH BECAUSE
28 THERE ARE MANY ARTICLES COME OUT, MANY SO-CALLED

1 STUDIES PUT OUT BY INDIVIDUALS OR EVEN INSTITUTIONS
2 THAT -- UNLESS THEY'RE CORROBORATED BY OTHERS -- ARE
3 ALMOST COMPLETELY MEANINGLESS. SO, MANY OF THESE
4 THINGS TURN OUT TO BE WRONG.

5 SECONDLY, FINDING FIBROSIS AT CONCENTRATIONS
6 MANY TIMES HIGHER THAN THE M.A.C. IS SOMETHING YOU'D
7 EXPECT. WE ALREADY KNEW THERE WAS FIBROSIS CAUSED
8 BY ASBESTOS, BUT -- SO, THERE ARE TWO PARTS TO THAT
9 ANSWER. HIGH CONCENTRATIONS OF FIBROSIS WOULDN'T
10 SURPRISE ME; AND SECONDLY, IF IT WAS SOMETHING EVEN
11 MORE SERIOUS THAN THAT IN EXPERIMENTAL ANIMALS.
12 THEN YOU HAVE TO TRANSLATE THAT TO HUMANS, OF
13 COURSE.

14 WE HARDLY PAID ANY ATTENTION TO ONE STUDY
15 BECAUSE THERE ARE SO DARN MANY OF THESE STUDIES THAT
16 COME OUT THAT ARE NEVER REPEATED. AND EVEN IF THEY
17 ARE, THEN YOU HAVE TO TAKE THAT DATA AND ASSOCIATE
18 IT WITH ALL THE OTHER KNOWN DATA AND DECIDE WHICH IS
19 THE MOST MEANINGFUL.

20 Q. OKAY.

21 A. AND BASICALLY, WHEN PEOPLE START
22 TOXICOLOGICAL STUDIES ON ANIMALS THEY ALWAYS START
23 OUT AT HIGH CONCENTRATIONS OF THE MATERIAL AND THEN
24 WORK ON DOWN. THEY START AT CONCENTRATIONS THAT
25 THEY ARE REASONABLY CERTAIN WOULD CAUSE SOME
26 PROBLEM, AND THEN THEY WORK ON DOWN TO FIND A LEVEL
27 FROM THERE.

28 THEY DON'T USE THAT AS A LEVEL FOR ANYTHING.

1 THEY START WITH THE HIGH CONCENTRATION TO TRY TO
2 FIND OUT WHAT DOES THIS DO, WHERE DOES IT AFFECT THE
3 ORGANISM, SO WE KNOW WHAT TO LOOK FOR IN HUMANS.

4 THEN YOU HAVE TO APPLY THAT TO HUMANS, THEN
5 YOU HAVE TO EQUATE IT WITH THE WORK ENVIRONMENT.

6 A SINGLE ANIMAL EXPERIMENTATION, WE'D HARDLY
7 PAY ANY ATTENTION TO IT BECAUSE THERE ARE THOUSANDS
8 OF THESE THAT COME OUT, AND MANY OF THEM ARE
9 MEANINGLESS.

10 I DON'T KNOW WHICH ONE YOU ARE REFERRING, TO
11 BUT IN GENERAL THAT WOULD BE OUR APPROACH TO IT.

12 Q. OKAY.

13 A. WE DON'T SLUFF THEM OFF, BUT WE DON'T
14 CHANGE OUR IDEAS JUST ON THE BASIS OF ONE PERSON OR
15 ONE GROUP'S NEW CONCEPT, WHICH MIGHT GO COMPLETELY
16 WRONG. THERE HAVE BEEN HUNDREDS OF OTHERS WHO HAVE
17 SAID SOMETHING ELSE PERHAPS. WE WOULDN'T -- WE
18 DON'T GET EXCITED ABOUT ONE PAPER.

19 Q. AND WOULD THE INFORMATION THAT I JUST
20 DESCRIBED HAVE CAUSED YOU TO CHANGE YOUR CONCLUSIONS
21 AND RECOMMENDATIONS WITH REGARD TO THE ALGOMA PLANT
22 IN ANY WAY?

23 MR. BURGI: SAME OBJECTION.

24 THE WITNESS: NOT AT ALL. NOT AT 100 PARTS
25 PER MILLION, A HUNDRED MILLION PARTICLES PER CUBIC
26 FOOT -- EXCUSE ME, I'M MIXING MY TERMINOLOGY -- A
27 HUNDRED MILLION PARTICLES PER CUBIC FOOT, AND
28 CAUSING SOME FIBROSIS IN EXPERIMENTAL ANIMALS

1 -- THAT WOULDN'T HAVE CHANGED ANYTHING WHATSOEVER.

2 Q. OKAY. THANK YOU.

3 NOTHING FURTHER.

4 MR. HARRINGTON: JUST A COUPLE QUESTIONS.

5

6 FURTHER EXAMINATION

7 BY MR. HARRINGTON:

8 Q. MR. FLUCK, HAVE WE EVER MET BEFORE
9 TODAY, YOU AND I?

10 A. NOT THAT I KNOW OF.

11 Q. OKAY. YOU'VE NEVER SPOKEN WITH ME?

12 A. NEVER SPOKEN TO YOU, NO. YOU WEREN'T
13 THE ONE WHO WAS ON THE PHONE.

14 Q. OKAY.

15 A. NOPE, WE HAVEN'T MET.

16 Q. ALL RIGHT. THANK YOU.

17 MR. RILEY: OKAY.

18 THE WITNESS: NOT THAT I KNOW OF. IT MIGHT
19 HAVE BEEN IN THE DEEP DARK PAST SOMEWHERE I BUMPED
20 INTO YOU.

21 MR. RILEY: ANYTHING FURTHER?

22 MR. BURGI: NO. DO YOU WANT TO ENTER INTO A
23 STIPULATION?

24 MR. RILEY: MR. FLUCK, YOU HAVE THE RIGHT TO
25 REVIEW THE TRANSCRIPT OF THIS DEPOSITION TO
26 DETERMINE WHETHER OR NOT THIS COURT REPORTER HAS
27 TRANSCRIBED ACCURATELY EVERYTHING THAT YOU SAID.

28 YOU DON'T HAVE TO DO THAT IF YOU ARE CONFIDENT

1 THAT THIS COURT REPORTER WHO IS A PROFESSIONAL WILL
2 TRANSCRIBE ACCURATELY WHAT YOU SAID. YOU CAN WAIVE
3 YOUR RIGHT TO READ AND SIGN THE TRANSCRIPT, BUT THAT
4 IS CERTAINLY A RIGHT THAT YOU HAVE TO ENSURE THAT
5 THIS TRANSCRIPT OF YOUR DEPOSITION IS TRANSCRIBED
6 ACCURATELY.

7 MR. BURGI: CORRECT ME IF I'M WRONG, HE ALSO
8 HAS A RIGHT TO CHANGE ANY OF HIS TESTIMONY.

9 MR. RILEY: I THINK THAT'S A VERY NOVEL
10 NOTION. I DON'T BELIEVE HE HAS A RIGHT TO CHANGE
11 HIS TESTIMONY.

-12 I BELIEVE HE HAS A RIGHT TO CORRECT
13 DESCRIPTION ERRORS.

14 MR. HARRINGTON: RIGHT. THAT'S MY
15 UNDERSTANDING, ALL THE ERRORS IN THE TRANSCRIPT, NOT
16 THE SUBSTANCE, THAT YOU WANT TO CHANGE.

17 MR. BURGI: THERE MUST BE A VARIANCE IN
18 CALIFORNIA LAW. WE CAN CHANGE THE TRANSCRIPT, BUT
19 IT MAY BE COMMENTED ON.

20 MR. RILEY: CALIFORNIA IS UNIQUE IN MANY
21 RESPECTS. MAYBE IT'S UNIQUE IN THAT ONE AS WELL.

22 THE WITNESS: I'D LIKE TO ASK A QUESTION.
23 YOU MEAN REVIEW IT PRIOR TO ITS BEING PRINTED OR
24 WHATEVER? I HAVE TO SIGN IT, DON'T I? ISN'T THAT
25 THE TIME WHEN I CAN SAY YES OR NO?

26 MR. RILEY: YOU CAN WAIVE THE RIGHT TO
27 REVIEW AND SIGN IT. IF IT'S ALL RIGHT WITH THE
28 PARTIES WE'LL JUST GO AHEAD AND USE IT WITHOUT YOUR

1 SIGNATURE, IF THAT'S STIPULATED. BUT YOU ARE THE
2 FIRST PERSON WHO HAS THE DECISION TO MAKE.

3 YOU CAN REVIEW IT FOR TRANSCRIPT ACCURACY AND
4 MAKE ANY CORRECTIONS IF THERE ARE TRANSCRIPT ERRORS,
5 AND THEN SIGN IT TO VERIFY THAT IT IS AN ACCURATE
6 TRANSCRIPT OF WHAT YOU SAID; OR YOU MAY WAIVE THAT
7 RIGHT. AND WE CAN'T -- OUR RIGHT TO STIPULATE HAS
8 NOTHING TO DO WITH THAT FIRST DECISION. THAT'S UP
9 TO YOU.

10 THE WITNESS: I'D LIKE TO REVIEW IT TO BE
11 SURE I SAID WHAT --

12 MR. RILEY: SURE.

13 THE WITNESS: -- WHAT I MEANT TO SAY.

14 I DON'T INTEND TO CHANGE ANYTHING. I DON'T
15 INTEND TO CHANGE MY OPINIONS. BUT IF I MISSPOKE
16 SOMEWHERE --

17 MR. RILEY: SURE.

18 THE WITNESS: I'D LIKE TO REVIEW IT.

19 MR. RILEY: WELL, IF YOU HAVE ANY SUGGESTED
20 CHANGES, YOU CAN MAKE IT CLEAR WHY IT IS YOU WANT TO
21 MAKE THE CHANGE, AND THAT CAN BE DEALT WITH AT THE
22 TIME.

23 THE COURT REPORTER WILL CONTACT YOU WHEN THIS
24 IS AVAILABLE, MAKE IT AVAILABLE TO YOU SO YOU MAY
25 READ IT, AND THEN YOU CAN GO FORWARD FROM THERE.

26 MR. BURGI: DO YOU WANT TO SPECIFY AN AMOUNT
27 OF TIME WITH RESPECT TO THE STIPULATION?

28 MR. RILEY: IT IS NECESSARY THAT WE HAVE

1 THIS THING REASONABLY QUICKLY, SINCE WE'RE SCHEDULED
2 TO GO TO TRIAL ON NOVEMBER 4. AND WE'LL TALK WITH
3 THE COURT REPORTER OFF THE RECORD ABOUT WHEN THAT
4 TRANSCRIPT WILL BE MADE AVAILABLE. I THINK WE CAN
5 SAY ON THE RECORD THAT IT WILL BE DONE WITH ALL
6 DISPATCH, AND WE WILL GET IT TO YOU.

7 MR. BURGI: I MEAN WITH RESPECT TO THE
8 NUMBER OF DAYS THE WITNESS WILL HAVE FOR ITS REVIEW
9 AND RETURN TO THE REPORTER.

10 MR. RILEY: CAN WE STIPULATE HE'LL HAVE
11 FIVE DAYS TO DO THAT? IS THAT ANY PROBLEM WITH YOU?

12 THE WITNESS: ONE WILL DO.

13 MR. RILEY: FINE.

14 WE'LL GIVE YOU A LITTLE LEEWAY OF FIVE DAYS.

15 MR. FLUCK, THANK YOU FOR YOUR COURTESY, AGAIN,
16 IN HAVING US IN YOUR HOME.

17 MR. HARRINGTON: THANK YOU, SIR.

18 * * *

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1 SIGNATURE PAGE:

2

3 I DECLARE UNDER PENALTY OF PERJURY THAT THE
4 FOREGOING IS TRUE AND CORRECT.

5 EXECUTED AT hompson,
6 CALIFORNIA, ON THIS 23 DAY OF October,
7 1985.

8

9

10

William Z. Fluck
WILLIAM Z. FLUCK

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1 DEPOSITION CERTIFICATE

2 STATE OF)
3 CALIFORNIA) SS.
45 I, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR
6 THE STATE OF CALIFORNIA, DO HEREBY CERTIFY:7 THAT, PRIOR TO BEING EXAMINED, THE WITNESS
8 NAMED IN THE FOREGOING DEPOSITION WAS BY ME DULY
9 SWORN TO TESTIFY THE TRUTH, THE WHOLE TRUTH AND
10 NOTHING BUT THE TRUTH.11 THAT SAID DEPOSITION WAS TAKEN DOWN BY ME IN
12 SHORTHAND AT THE TIME AND PLACE THEREIN NAMED AND
13 THEREAFTER REDUCED TO WRITING UNDER MY DIRECTION AND
14 SUPERVISION.15 I FURTHER CERTIFY THAT I AM NOT INTERESTED IN
16 THE EVENT OF THE ACTION.17 I DECLARE UNDER PENALTY OF PERJURY THAT THE
18 FOREGOING IS TRUE AND CORRECT.

19

20 WITNESS MY HAND AND OFFICIAL SEAL THIS 18TH DAY
21 OF OCTOBER, 1985.

22

23

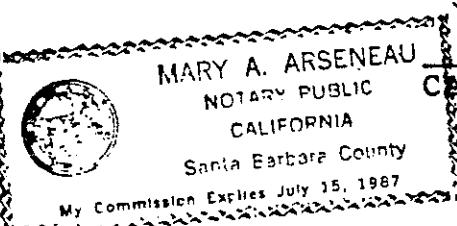
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*Mary A. Arsenau*
CALIFORNIA C.S.R. NO. 4848